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Edward Leaton
R E P O R T

FROM THE

SELECT COMMITTEE

ON THE

VACCINATION ACT (1867);

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

APPENDIX AND INDEX.

Ordered, by The House of Commons, to be Printed,
23 May 1871.

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Monday, 13th February 1871.

Ordered, THAT a Select Committee be appointed to inquire into the operation of the Vaccination Act (1867), and to Report whether such Act should be amended.

Thursday, 16th February 1871.

Committee nominated of—

Mr. William Edward Forster.
Mr. Stephen Cave.
Mr. Candlish.
Mr. William Henry Smith.
Mr. Muntz.
Lord Robert Montagu.
Mr. Jacob Bright.
Sir Smith Child.

Dr. Lyon Playfair.
Mr. Holt.
Mr. Taylor.
Sir Dominic Corrigan.
Dr. Brewer.
Mr. Alderman Carter.
Mr. Hibbert.

Ordered, THAT the Committee have power to send for Persons, Papers, and Records.

Ordered, THAT Five be the Quorum of the Committee.

Tuesday, 21st March 1871.

Ordered, THAT the Petition of Charles Rose, praying for alteration, be referred to the Select Committee on the Vaccination Act, 1867.

Monday, 27th March 1871.

Ordered, THAT the Petition of the Brackley Board of Guardians, for alteration of the Law, be referred to the Committee.

Tuesday, 23rd May 1871.

Ordered, THAT the Committee have power to report their Observations, with the Minutes of Evidence taken before them, to The House.

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R E P O R T.

THE SELECT COMMITTEE appointed to inquire into the operation of the VACCINATION ACT (1867), and to report whether such Act should be amended;—HAVE considered the matter referred to them, and have agreed on the following REPORT:—

EIGHT Sittings of your Committee have been occupied in hearing the evidence of persons who assert that vaccination is useless and injurious, and who therefore object to its enforcement and encouragement by the law.

After careful consideration of this evidence, and of medical and other evidence given in reply, your Committee agree with the general opinion,—

That the cow-pox affords, if not an absolute, yet a very great protection against an attack of small-pox; and an almost absolute protection against death from that disease.

That if the operation be performed with due regard to the health of the person vaccinated, and with proper precautions in obtaining and using the vaccine lymph, there need be no apprehension that vaccination will injure health or communicate any disease.

That small-pox unchecked by vaccination is one of the most terrible and destructive of diseases, as regards the danger of infection, the proportion of deaths among those attacked, and the permanent injury to the survivors; and, therefore,

That it is the duty of the State to endeavour to secure the careful vaccination of the whole population.

Your Committee have no doubt that the almost universal opinion of medical science and authority, is in accordance with Dr. Gull when he states, that “vaccination is as protective against small-pox as small-pox itself;” with Dr. West, when he gives as the result of his experience, as Physician to the Children’s Hospital in Great Ormond-street and as having had charge of between 50,000 and 60,000 children since 1835, that “he does not think that “vaccination does produce disease;” and with Sir William Jenner, when he says, “I should think myself wicked, and really guilty of a crime, if I did not “recommend every parent to have his child vaccinated early in life.” (4741). (4929). (4931). (4515*).

Against this evidence in favour of vaccination, the prevalence of the present small-pox epidemic, especially in the metropolis, has been alleged.

Your Committee, however, believe that, on the one hand, if vaccination had not been general, this epidemic might have become a pestilence as destructive as small-pox has often been, where the population has been unprotected; and that, on the other hand, if this preventive had been universal the epidemic could not have approached its present extent.

Vaccination is generally believed to require repetition about the age of puberty; but as it is almost impossible to enforce revaccination, it is most important that all children should be vaccinated both for their own sakes and that of the community, to prevent their catching and spreading disease.

There are three classes of children who being, by the conduct of their parents, left unvaccinated, are themselves in great danger, and may become centres of infection to others.

(1.) There are the children who are utterly neglected by their parents.

(2.) There is the much larger number of children of parents who, while not denying their duty or desiring to disregard it, postpone its fulfilment, and who from carelessness or forgetfulness delay to protect their children until driven to the vaccine station by the panic fear of an epidemic.

(3.) There are the children of those parents, very few in proportion to the whole population, who assert that vaccination will do harm.

With regard to the first and second of these classes, there can hardly be any objection to the principle of a compulsory law, though there may be practical difficulties in its application; but, in dealing with the third class, it becomes necessary to weigh the claims of the parent to control, as he thinks fit, the medical treatment of an infant child, as against the duty of the State to protect the health of the community, and to save the child itself from a dreadful disease.

While weighing these conflicting claims, your Committee have had to consider the effect of the change in the law introduced by the Act of 1867, which, contrary to the provisions of the previous English or present Irish Acts, makes the parent liable to repeated convictions and penalties for not allowing his child to be vaccinated.

There appear to have been several cases of infliction of more than one fine or imprisonment in regard to the same child; and your Committee, though by no means admitting the right of the parent to expose his child or his neighbours to the risk of small-pox, must express great doubt whether the object of the law is gained by thus continuing a long contest with the convictions of the parent.

The public opinion of the neighbourhood may sympathise with a person thus prosecuted, and may in consequence be excited against the law; and after all, though the parent be fined or imprisoned, the child may remain unvaccinated. In such a case the law can only triumph by the forcible vaccination of the child.

In enactments of this nature when the State, in attempting to fulfil the duty, finds it necessary to disregard the wish of the parent, it is most important to secure the support of public opinion; and, as your Committee cannot recommend that a policeman should be empowered to take a baby from its mother to the vaccine station, a measure which could only be justified by an extreme necessity, they would recommend that whenever in any case two penalties, or one full penalty have been imposed upon a parent, the magistrate should not impose any further penalty in respect of the same child.

It has been suggested that the parent's declaration of belief that vaccination is injurious might be pleaded against any penalty, but your Committee believe that if the law were thus changed it would become a dead letter. Prosecutions would soon cease, and the children of the many apathetic and neglectful parents would be left unvaccinated, as well as the children of the few opponents of vaccination.

Your Committee are glad to find that wherever the Guardians endeavour to carry out the law, it is very generally and indeed almost universally enforced; but there are some amendments by which they think the Act referred to them might be made more efficient.

By sec. 28, the Guardians of any parish may appoint an officer to promote vaccination, and to prosecute persons offending against the Act; and it appears that in the majority of the Unions such officers have been appointed, and that the law in consequence is more efficiently administered. Your Committee recommend that this appointment be made obligatory on the Guardians.

They are also strongly of opinion that the registration of vaccination should be simplified; that the vaccination officer should keep the vaccination register, and therefore that the certificates under the Act should be sent to him; and also

also that the registrar of the district should forward to him a monthly return of births and of the infants that have died.

The suggestion has been made that a considerable proportion of the expenses of working the Act should be contributed from monies to be voted by Parliament. Your Committee believe that efficient working would be promoted by such contribution. Without doubt local agency must be relied on for administration, but central inspection and control are also needed, and would be much more powerful if a payment towards the expenses could be withdrawn in cases of maladministration.

Your Committee cannot conclude without expressing their opinion on two questions beyond the scope of the Act referred to them, though not of the subject of their inquiry.

A compulsory registration of births such as exists in Scotland and Ireland is needed, as the non-registered children are those most likely to escape the notice of the vaccinators.

There also appear to be disadvantages in the present division of sanitary responsibility between the departments of the Government. The Medical Department of the Privy Council inspects the vaccination of every Union, and advises the Poor Law Board in regard to the arrangements proposed by Guardians, which arrangements are then approved or disapproved by the Poor Law Board.

This division of duties cannot but tend to delay and to non-efficiency, and though your Committee do not pretend to decide to which of these Departments the duty of administering the law should be entrusted, they do not think such duty should be shared between two Offices, and they believe that one and the same Department should advise, inspect, approve, and control.

23 May 1871.

PROCEEDINGS OF THE COMMITTEE.

Thursday, 23rd February 1871.

MEMBERS PRESENT :

Mr. William Edward Forster.	Mr. William Henry Smith.
Dr. Brewer.	Lord Robert Montagu.
Dr. Lyon Playfair.	Mr. Stephen Cave.
Mr. Muntz.	Mr. Jacob Bright.
Sir Smith Child.	Mr. Holt.
Mr. Taylor.	Sir Dominic Corrigan.
Mr. Candlish.	Mr. Alderman Carter.
Mr. Hibbert.	

Mr. *Forster* was called to the Chair.

The Committee deliberated.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 28th February 1871.

MEMBERS PRESENT :

Mr. FORSTER in the Chair.

Mr. Candlish.	Dr. Lyon Playfair.
Dr. Brewer.	Mr. William Henry Smith.
Mr. Taylor.	Mr. Muntz.
Mr. Holt.	Sir Dominic Corrigan.
Sir Smith Child.	Lord Robert Montagu.
Mr. Hibbert.	Mr. Stephen Cave.
Mr. Jacob Bright.	Mr. Alderman Carter.

The Committee deliberated.

Mr. *Candlish*, a Member of the Committee, and Mr. *William J. Collins*, M.D., were severally examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 3rd March 1871.

MEMBERS PRESENT :

Mr. FORSTER in the Chair.

Mr. Candlish.	Dr. Lyon Playfair.
Mr. Stephen Cave.	Sir Smith Child.
Mr. Alderman Carter.	Mr. Muntz.
Dr. Brewer.	Mr. Jacob Bright.
Mr. Taylor.	Mr. Holt.
Sir Dominic Corrigan.	Mr. William Henry Smith.
Mr. Hibbert.	

Mr. *William J. Collins*, M.D., was further examined; Mr. *Charles Thomas Pearce*, M.D., was examined.

The Committee deliberated.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 7th March 1871.

MEMBERS PRESENT :

Mr. Hibbert.	Dr. Lyon Playfair.
Lord Robert Montagu.	Mr. Holt.
Mr. Stephen Cave.	Mr. Muntz.
Mr. Alderman Carter.	Mr. Jacob Bright.
Dr. Brewer.	Mr. William Henry Smith.
Mr. Taylor.	

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

The Committee deliberated.

Mr. *C. T. Pearce*, M.D., was further examined.

Sir *Jervoise Clarke Jervoise*, Bart., was examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 10th March 1871.

MEMBERS PRESENT :

Mr. Hibbert.	Mr. Muntz.
Dr. Lyon Playfair.	Lord Robert Montagu.
Mr. Alderman Carter.	Mr. Holt.
Dr. Brewer.	Mr. Jacob Bright.
Mr. Taylor.	Mr. Stephen Cave.
Sir Smith Child.	Mr. William Henry Smith.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

Mr. *Charles Thomas Pearce*, M.D., was further examined.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 14th March 1871.

MEMBERS PRESENT :

Mr. Hibbert.	Mr. Jacob Bright.
Lord Robert Montagu.	Mr. William Henry Smith.
Mr. Candlish.	Mr. Holt.
Dr. Brewer.	Mr. Stephen Cave.
Mr. Taylor.	Mr. Alderman Carter.
Dr. Lyon Playfair.	Mr. Forster.
Mr. Muntz.	

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair; afterwards, Mr. *Forster* in the Chair.

Mr. *James John Garth Wilkinson*, M.D., and Mr. *George Sleight Gibbs*, were severally examined.

The Committee deliberated.

[Adjourned till Friday, at Twelve o'clock.]

Friday, 17th March 1871.

MEMBERS PRESENT :

Mr. Hibbert.
Mr. Stephen Cave.
Mr. Candlish.
Mr. Alderman Carter.
Dr. Brewer.
Mr. Taylor.
Sir Smith Child.

Mr. Muntz.
Dr. Lyon Playfair.
Lord Robert Montagu.
Mr. Jacob Bright.
Mr. Holt.
Mr. William Henry Smith.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

Mr. *George Sleight Gibbs* was further examined.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 21st March 1871.

MEMBERS PRESENT :

Mr. Hibbert.
Sir Smith Child.
Dr. Brewer.
Mr. Taylor.
Mr. Stephen Cave.
Dr. Lyon Playfair.

Mr. Candlish.
Mr. Muntz.
Mr. Holt.
Mr. W. H. Smith.
Mr. Alderman Carter.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

Mr. *Aaron Emery*, Mr. *Frederick R. Covington*, Mrs. *Elizabeth Kemp*, and Mr. *Thomas Baker*, were severally examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 24th March 1871.

MEMBERS PRESENT :

Mr. Hibbert.
Dr. Brewer.
Mr. Candlish.
Sir Smith Child.
Mr. Taylor.
Mr. Stephen Cave.
Mr. Jacob Bright.

Mr. Holt.
Mr. Muntz.
Mr. W. H. Smith.
Dr. Lyon Playfair.
Mr. Alderman Carter.
Mr. Forster.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair; afterwards, Mr. *Forster* in the Chair.

Mr. *James William Addison* and the Rev. *William Hume-Rothery* were severally examined.

Mr. *Aaron Emery* was further examined.

The Committee deliberated.

Mr. *John Simon*, F.R.S., was examined.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 28th March 1871.

MEMBERS PRESENT :

Mr. FORSTER, in the Chair.

Mr. Candlish.
Dr. Brewer.
Mr. Taylor.
Mr. Muntz.
Mr. Hibbert.

Mr. W. H. Smith.
Mr. Jacob Bright.
Mr. Alderman Carter.
Mr. Stephen Cave.
Mr. Holt.

Mr. *Richard Butler Gibbs* was examined.

Mr. *John Simon*, F.R.S., was further examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 31st March 1871.

MEMBERS PRESENT :

Mr. FORSTER, in the Chair.

Sir Smith Child.
Mr. Alderman Carter.
Mr. Taylor.
Mr. Holt.
Mr. Stephen Cave.
Mr. Candlish.

Mr. Jacob Bright.
Dr. Brewer.
Mr. Hibbert.
Dr. Lyon Playfair.
Mr. Muntz.
Mr. W. H. Smith.

Mr. *John Simon*, F.R.S., was further examined.

[Adjourned till Friday, 21st April, at Twelve o'clock.]

Friday, 21st April 1871.

MEMBERS PRESENT :

Mr. FORSTER, in the Chair.

Mr. Stephen Cave.
Mr. Candlish.
Mr. Alderman Carter.
Sir Smith Child.
Mr. Jacob Bright.
Mr. Holt.

Mr. Taylor.
Mr. Hibbert.
Dr. Brewer.
Dr. Lyon Playfair.
Mr. Muntz.

Mr. *John Simon*, F.R.S., was further examined.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 25th April 1871.

MEMBERS PRESENT :

Mr. Hibbert.
Sir Smith Child.
Dr. Brewer.
Mr. Taylor.
Lord Robert Montagu.
Mr. Jacob Bright.
Sir Dominic Corrigan.

Mr. Candlish.
Mr. Holt.
Mr. Stephen Cave.
Mr. Muntz.
Mr. W. H. Smith.
Mr. Alderman Carter.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

Mr. *Robert Hall Bakewell*, M.D., and Mr. *Danby Palmer Fry*, were severally examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 28th April 1871.

MEMBERS PRESENT:

Sir Smith Child.	Dr. Lyon Playfair.
Mr. Candlish.	Mr. Holt.
Mr. Stephen Cave.	Dr. Brewer.
Mr. Hibbert.	Mr. Taylor.
Sir Dominic Corrigan.	Mr. Jacob Bright.
Mr. Muntz.	Mr. Alderman Carter.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

Sir *Dominic Corrigan*, Bart., M.D. (a Member of the Committee), and Mr. *James Furness Marson*, F.R.C.S., were severally examined.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 2nd May 1871.

MEMBERS PRESENT:

Dr. Brewer.	Mr. Stephen Cave.
Mr. Candlish.	Mr. Holt.
Sir Dominic Corrigan.	Mr. W. H. Smith.
Mr. Taylor.	Mr. Alderman Carter.
Mr. Hibbert.	Sir Smith Child.
Lord Robert Montagu.	Mr. Forster.
Mr. Jacob Bright.	Dr. Lyon Playfair.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair; afterwards, Mr. *Forster* in the Chair.

Mr. *J. F. Marson*, F.R.C.S., Mr. *William Job Collins*, M.D., and Mr. *Alexander Wood*, M.D., were severally further examined.

Sir *William Jenner*, Bart., M.D., D.C.L., was examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 5th May 1871.

MEMBERS PRESENT:

Dr. Brewer.	Mr. Muntz.
Mr. Candlish.	Mr. Holt.
Sir Smith Child.	Dr. Lyon Playfair.
Mr. Hibbert.	Mr. Stephen Cave.
Mr. Taylor.	Mr. Alderman Carter.
Mr. Jacob Bright.	Mr. Forster.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair; afterwards, Mr. *Forster* in the Chair.

Mr. *J. F. Marson*, F.R.C.S., was further examined.

Mr. *William Gull*, M.D., F.R.S., and Mr. *Charles West*, M.D., were severally examined.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 9th May 1871.

MEMBERS PRESENT :

Mr. FORSTER, in the Chair.

Mr. Hibbert.
Mr. Candlish.
Dr. Brewer.
Mr. Taylor.
Mr. Muntz.
Mr. Alderman Carter.
Mr. Holt.

Mr. Stephen Cave.
Mr. Jacob Bright.
Sir Smith Child.
Mr. W. H. Smith.
Dr. Lyon Playfair.
Lord Robert Montagu.

In the absence of Mr. *Forster*, Mr. *Hibbert* was called to the Chair.

Mr. *Jonathan Hutchinson*, Mr. *James Neighbour*, and Mr. *Edward Cator Seaton*, M.D., were severally examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 12th May 1871.

MEMBERS PRESENT :

Mr. FORSTER, in the Chair.

Lord Robert Montagu.
Dr. Brewer.
Mr. Taylor.
Mr. W. H. Smith.
Mr. Stephen Cave.
Mr. Jacob Bright.

Mr. Muntz.
Mr. Holt.
Dr. Lyon Playfair.
Sir Smith Child.
Mr. Alderman Carter.

Mr. *E. C. Seaton*, M.D., was further examined.

Mr. *William Brewer*, M.D., a Member of the Committee, was examined.

[Adjourned till Friday next, at Twelve o'clock.]

Friday, 19th May 1871.

MEMBERS PRESENT :

Mr. FORSTER, in the Chair.

Mr. Jacob Bright.
Mr. Holt.
Mr. Alderman Carter.
Mr. Stephen Cave.
Dr. Brewer.
Dr. Lyon Playfair.
Mr. Candlish.

Mr. Hibbert.
Mr. W. H. Smith.
Sir Smith Child.
Lord Robert Montagu.
Mr. Taylor.
Mr. Muntz.

Mr. *John Simon*, F.R.S., was further examined.

The Committee deliberated.

[Adjourned till Tuesday next, at Twelve o'clock.]

Tuesday, 23rd May 1871.

MEMBERS PRESENT:

Mr. FORSTER, in the Chair.

Mr. Holt.
Mr. Jacob Bright.
Mr. Taylor.
Sir Smith Child.
Dr. Brewer.
Mr. Hibbert.
Dr. Lyon Playfair.

Lord Robert Montagu.
Mr. Stephen Cave.
Mr. Candlish.
Mr. Muntz.
Mr. W. H. Smith.
Mr. Alderman Carter.

DRAFT REPORT, proposed by the Chairman, read a first time, as follows:—

“1. Eight sittings of your Committee have been occupied in hearing the evidence of persons who assert that vaccination is useless and injurious, and who therefore object to its enforcement and encouragement by the law.

“2. After careful consideration of this evidence, and of medical and other evidence given in reply, your Committee agree with the general opinion,—

That the cow-pox affords, if not an absolute, yet a very great protection against an attack of small-pox; and an almost absolute protection against death from that disease.

That if the operation be performed with due regard to the health of the person vaccinated, and with proper precautions in obtaining and using the vaccine lymph, there need be no apprehension that vaccination will injure health or communicate any disease.

That small-pox unchecked by vaccination is one of the most terrible and destructive of all diseases, as regards the danger of infection, the proportion of deaths among those attacked, and the permanent injury to the survivors; and therefore

That it is the duty of the Government to endeavour to secure careful vaccination.

“3. It has been suggested that vaccination from the heifer instead of from the human subject, should be recommended; but it appears to be so uncertain in its action that its probable inefficacy against small-pox much more than counterbalances its possible advantage, as a system for general adoption.

(4741). “4. As regards the opinion of the medical profession, your Committee have no doubt that the overpowering and indeed almost universal opinion of medical science and authority, is in accordance with Dr. Gull when he states, that ‘vaccination is as protective against small-pox as small-pox itself;’ and with Dr. West, when he gives as the result of his experience, as Physician to the Children’s Hospital in Great Ormond-street and as having had charge of between 50,000 and 60,000 children since 1835, that ‘he does not think that (4929). vaccination does produce disease;’ and with Sir William Jenner, when he says, ‘I should (4931). think myself wicked, and really guilty of a crime, if I did not recommend every parent to ‘have his child vaccinated early in life;’ when asked whether he ‘knew of any practitioner (451). of standing who disbelieves in vaccination, or thinks it mischievous,’ replied ‘I do not; I cannot even conceive of any one doing so.’

“5. Against this evidence in favour of vaccination, the prevalence of the present small-pox epidemic, especially in the metropolis, has been alleged.

“6. Your Committee, however, believe that, on the one hand, if vaccination had not been general, this epidemic would probably have become a pestilence raging with destructive force like the plague of the Middle Ages; and that, on the other hand, if this preventive had been applied as much as it could have been applied the epidemic could not have approached its present extent.

“7. It must be remembered that vaccination is generally believed to require repetition after the age of childhood, in order to exert its full protective power, and as it is almost impossible to enforce revaccination, it is therefore most important that children should be vaccinated both for their own sakes and that of the community, to prevent their catching and spreading disease.

“8. There are three classes of children who being, by the conduct of their parents, left unvaccinated, are themselves in great danger, and are possible centres of infection to others.

(1.) There are children utterly neglected by their parents.

(2.) There is the much larger number of children of parents who, while not denying their duty or desiring to disregard it, postpone its fulfilment, and who from carelessness or forgetfulness delay to protect their children until driven to the vaccine station by the panic fear of an epidemic.

(3.) There are the children of those parents, very few in proportion to the whole population, who assert that vaccination will do harm.

“9. With

"9. With regard to the first and second of these classes, there can hardly be any objection to the principle of a compulsory law, though there may be practical difficulties in its application; but, in dealing with the third class, it becomes necessary to weigh the claims of the parent to control, as he thinks fit, the medical treatment of an infant child, as against the duty of the State to protect the health of the community, and to save the child itself from a dreadful disease.

"10. While weighing these conflicting claims, your Committee have had to consider the effect of the change in the law introduced by the Act of 1867, which, contrary to the provisions of the previous English or present Irish Acts, makes the parent liable to repeated convictions and penalties for not allowing his child to be vaccinated.

"11. There appear to have been several cases of infliction of more than one fine or imprisonment in regard to the same child; and your Committee, though by no means admitting the right of the parent to expose his child or his neighbours to the risk of small-pox, must express great doubt whether the object of the law is gained by thus continuing a long contest with the convictions of the parent.

"12. The public opinion of the neighbourhood may sympathise with a person thus prosecuted, and may in consequence be excited against the law; and after all, though the parent be fined or imprisoned, the child may remain unvaccinated. In such a case the law can only triumph by the forcible vaccination of the child.

"13. In enactments of this nature when the State, in attempting to fulfil the duty, finds it necessary to disregard the wish of the parent, it is most important to secure the support of public opinion; and, as your Committee cannot recommend that the policeman should be empowered to take the baby from its mother to the vaccine station, a measure which could only be justified by an extreme necessity, they would recommend that whenever in any case the full penalty has been imposed upon a parent, the magistrate should not impose any further penalty in respect of the same child.

"14. It has been suggested that the parent's declaration of belief that vaccination is injurious might be pleaded against any penalty, but your Committee believe that if the law were thus changed it would become a dead letter. Prosecutions would soon cease, and the children of the many apathetic and neglectful parents would be left unvaccinated, as well as the children of the few opponents of vaccination.

"15. Your Committee are glad to find that wherever the guardians endeavour to carry out the law, it is very generally and indeed almost universally enforced; but there are some amendments by which they think the Act referred to them might be made more efficient.

"16. By sect. 28, the Guardians of any parish may appoint an officer to promote vaccination, and to prosecute persons offending against the Act; and it appears that in the majority of the unions such officers have been appointed, and that the law in consequence is more efficiently administered. Your Committee recommend that this appointment be made obligatory on the Guardians.

"17. They are also strongly of opinion that the registration of vaccination should be simplified; that the vaccination officer should keep the vaccination register, and therefore that the certificates under the Act should be sent to him; and also that the registrar of the district should forward to him a monthly return of births and of the infants that have died.

"18. The suggestion has been made that a considerable proportion of the expenses of working the Act should be contributed from the Consolidated Fund. Your Committee believe that efficient working would be promoted by such contribution. Without doubt local agency must be relied on for administration, but central inspection and control are also needed, and would be much more powerful if a payment towards the expenses could be withdrawn in cases of maladministration.

"19. Your Committee cannot conclude without expressing their opinion on two questions beyond the scope of the Act referred to them, though not of the subject of their inquiry.

"20. A compulsory registration of births such as exists in Scotland and Ireland would be of advantage, as the non-registered children are precisely those most likely to escape the notice of the vaccinators.

"21. There also appear to be disadvantages in the present division of sanitary responsibility between the departments of the Government. The Medical Department of the Privy Council inspects the vaccination of every union, and advises the Poor Law Board in regard to the arrangements proposed by Guardians, which arrangements are then approved or disapproved by the Poor Law Board.

"22. This division of duties cannot but tend to delay and to non-efficiency, and though your Committee do not pretend to decide to which of these Departments the duty of administering the law should be entrusted, they do not think such duty should be shared between two offices, and they believe that one and the same Department should advise, inspect, approve, and control."

Draft Report proposed by the Chairman, read a second time, paragraph by paragraph.

Paragraph 1, *agreed to*.

Paragraph 2.—Amendment proposed, in line 4, to leave out from the words, “attack of small-pox,” to the end of the paragraph, in order to insert the following words:—“That, therefore, it is desirable that every facility should be given to enable the people to be carefully vaccinated. Your Committee cannot recommend that vaccination should continue to be made compulsory by Act of Parliament, for the following reasons: that the health and lives of some children are, though it may be in rare cases, undoubtedly sacrificed by it; that syphilis can be, and is, transmitted by vaccination; and that children from whom the vaccine lymph is taken may be syphilitic, the doctor at the same time having no means of discovering the fact”—(Mr. *Bright*)—instead thereof.—Question put, That the words “and an almost,” stand part of the paragraph—put, and *agreed to*.

Another Amendment proposed, in line 6, after the word “that,” to insert the following words:—“Although it has been given in evidence that in a few cases disease has been communicated by vaccination, yet”—(Mr. *Candlish*).—Question put, That these words be there inserted.—The Committee divided:

Ayes, 3.
Mr. Candlish.
Mr. Holt.
Mr. Hibbert.

Noes, 9.
Mr. Stephen Cave.
Mr. W. H. Smith.
Mr. Muntz.
Lord Robert Montagu.
Mr. Jacob Bright.
Sir Smith Child.
Dr. Lyon Playfair.
Mr. Taylor.
Dr. Brewer.

Another Amendment proposed, in line 6, to leave out the words, “If the operation be performed with due regard to the health of the person vaccinated, and with proper precautions in obtaining and using the vaccine lymph, there need be no apprehension that vaccination will injure health or communicate any disease,” in order to insert the following words:—“That vaccination may be regarded as a perfectly safe operation, when reasonable care is taken in obtaining and using the vaccine lymph, and where the person vaccinated is not in a bad state of health. It is true that evidence has been laid before your Committee showing that in some very few cases disease has been communicated by vaccination, but the danger is so infinitesimal in respect of proportion, that, subject to the conditions mentioned above, the Committee do not hesitate to express their conviction of the (practically) perfectly safe character of the operation”—(Mr. *Taylor*)—instead thereof.—Question put, That the words proposed to be left out stand part of the paragraph.—The Committee divided:

Ayes, 9.
Mr. Stephen Cave.
Mr. W. H. Smith.
Mr. Muntz.
Lord Robert Montagu.
Sir Smith Child.
Dr. Lyon Playfair.
Mr. Holt.
Dr. Brewer.
Mr. Hibbert.

Noes, 2.
Mr. Candlish.
Mr. Taylor.

Another Amendment proposed, in line 12, to leave out from the word “survivors,” to the end of the paragraph—(Mr. *Candlish*).—Question, That the words “and therefore,” stand part of the paragraph—put, and *agreed to*.

Other Amendments made.—Paragraph, as amended, *agreed to*.

Paragraph 3, *disagreed to*.

Paragraph 4, amended, and *agreed to*.

Paragraph 5, *agreed to*.

Paragraphs 6, 7, amended, and *agreed to*.

Paragraphs 9—12, *agreed to*.

Paragraph 13.—Amendment made.—Another Amendment proposed, in line 5, to leave out from the words, “extreme necessity,” to the end of the paragraph, in order to insert the following words:—“Neither can they regard the action of the present law as likely, by the enforcement of repeated penalties, to secure the object with which it was enacted. That object might, in the opinion of your Committee, be more reasonably effected by a compulsory registration of births, followed by the production, to the registrar, of a certificate of vaccination within three months, the parent being at liberty to produce, in lieu of such certificate, a declaration made before a magistrate on a stamp, that he, for reasons

reasons therein enumerated, desires to avoid the vaccination of his child, whereupon the child should be registered as unvaccinated, a further charge being made for such registration, and an obligation incurred to report to the registrar any attack of small-pox from which the child may suffer"—(*Mr. Holt*)—instead thereof.—Question put, That the words "they would recommend that," stand part of the paragraph.—The Committee divided :

Ayes, 8.
Mr. Stephen Cave.
Mr. W. H. Smith.
Mr. Muntz.
Sir Smith Child.
Dr. Lyon Playfair.
Mr. Taylor.
Mr. Alderman Carter.
Mr. Hibbert.

Noes, 3.
Mr. Candlish.
Lord Robert Montagu.
Mr. Holt.

Another Amendment proposed, in line 5, to leave out from the words "recommend that" to the end of the paragraph, in order to insert the following words:—"A formal declaration before a magistrate, of belief on the part of the parent that vaccination is injurious, should be a valid plea against punishment for non-fulfilment of the summons to vaccinate; but in order that such plea should not be idly urged, the Committee recommend that such declaration should require a stamp of the value of ten shillings, and should be repeated with each successive child"—(*Mr. Taylor*)—instead thereof.—Question put, That the words "whenever in any case" stand part of the paragraph.—The Committee divided :

Ayes, 8.
Mr. Stephen Cave.
Mr. W. H. Smith.
Mr. Muntz.
Lord Robert Montagu.
Sir Smith Child.
Dr. Lyon Playfair.
Mr. Alderman Carter.
Mr. Hibbert.

Noes, 4.
Mr. Candlish.
Mr. Jacob Bright.
Mr. Holt.
Mr. Taylor.

Another Amendment proposed, in line 10, after the word "case," to insert the word "a"—(*Mr. Muntz*).—Question put, That the word "a" be there inserted.—The Committee divided :

Ayes, 5.
Mr. Candlish.
Mr. Muntz.
Mr. Jacob Bright.
Mr. Holt.
Mr. Taylor.

Noes, 7.
Mr. Stephen Cave.
Mr. W. H. Smith.
Lord Robert Montagu.
Sir Smith Child.
Dr. Lyon Playfair.
Mr. Alderman Carter.
Mr. Hibbert.

Amendments made.—Another Amendment proposed, in line 6, to leave out the word "not," and insert the words, "have discretion not to"—(*Lord Robert Montagu*)—instead thereof.—Question, That the word "not" stand part of the paragraph—put, and *agreed to*.

Paragraph, as amended, *agreed to*.

Paragraphs 14—17, *agreed to*.

Paragraph 18, amended, and *agreed to*.

Paragraph 19, *agreed to*.

Paragraph 20, amended, and *agreed to*.

Paragraphs 21, 22, *agreed to*.

Question, That this Report, as amended, be the Report of the Committee to The House—put, and *agreed to*.

Ordered, To Report, together with the Minutes of Evidence, and an Appendix.

EXPENSES OF WITNESSES.

N A M E of W I T N E S S .	Profession or Condition.	From whence Summoned.	Number of Days absent from Home under Orders of Committee.	Expenses of Journey to London and back.	Allowance during Absence from Home.	T O T A L Expenses allowed to Witness.
				£. s. d.	£. s. d.	£. s. d.
Covington, Fredk. R.	Tailor - - -	Northampton -	2	- 15 -	1 - -	1 15 -
Hume-Rothery, Rev. William.	Clergyman - -	Manchester - -	-	3 15 -	- - -	3 15 -
					£.	5 10 -

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MINUTES OF EVIDENCE.

Tuesday, 28th February 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Sir Dominic Corrigan.
Mr. William Edward Forster.

Mr. Hibbert.
Mr. Holt.
Lord Robert Montagu.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. JOHN CANDLISH, a Member of the Committee ; Examined.

1. *Chairman.*] You are Member for Sunderland?—I am.

2. And last year you brought into the House a Bill to amend the Vaccination Act of 1867, did you not?—Yes ; by limiting its penalties.

3. Do you object to inform the Committee upon what grounds you made that application to the House?—In the first place, I am taking no side in the controversy as between vaccination and non-vaccination ; I wish it to be understood that I do not advocate any theory of my own, and especially as being a Member of this Committee, and in a comparatively judicial position, I wish to take no side in the controversy as between those in favour of vaccination and those opposed to vaccination. The first thing that directed my attention to the present state of the law was a decision in the Court of Queen's Bench on the 15th of January last year, in which an appeal against the decision of a provincial bench of magistrates convicting a second time was sustained. It at once occurred to me that the Committee which sat in 1866 to deal with the clauses of a Bill then before the House (and which, I think, ultimately became law in 1867), had not intended that the penalty should be repeated, but that one penalty should be a discharge from any obligation to submit a child to vaccination. I had that impression, and I retain it, from having been a Member of the Committee, and a party to the discussions on the Bill of 1866.

4. Has more than one case come to your knowledge in which the penalty has been imposed
0.37.

more than once within the space of a year?—Yes, and having, in consequence of the view I took as to what the intention of the Committee was, given notice to introduce a Bill limiting the penalties, I had many communications on the subject.

5. Will you give the nature of those communications, and one or two of the most striking cases?—With the Committee's permission I will give a few of them to illustrate the state of feeling pervading the country ; in the minds of individuals all over the country. I have before me a communication from James A. Toulson, of Leeds, who writes as follows : " I enclose a few more particulars of the vaccination prosecution under which I have suffered so severely during the last 14 months. I have now been summoned up 12 times before the magistrates at Leeds, and fined on four separate occasions for refusing to vaccinate my child." And there is a long statement of the circumstances, with which I need not trouble the Committee.

6. Could you give the date of those four different times when he was so convicted? —The first conviction was penalty and costs, 28 s. 6 d., on the 5th of April 1869 ; the second was on the 29th, in February 1870 ; the third for 10 s. was on the 3rd of May 1870 ; the fourth 29 s. 6 d. was on June the 21st 1870 ; the fines were paid, and as I am informed, the child on account of whom the prosecution was taken is still unvaccinated.

7. Have you reason to believe that all those four penalties were inflicted with regard to one
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and the same child?—I believe so; in one case the child was sent away out of the jurisdiction of the magistrate to avoid vaccination; I mention that fact as an evidence of the strong feeling in the mind of the parent who was at the trouble of sending his child to Sheffield to escape the action of the law.

8. Are the Committee to understand that you have so far examined into that case that you have no doubt of the substantial correctness of that statement?—Not the slightest; I have it from direct communication with Mr. Toulson himself.

9. Will you give another case?—I would mention besides the case of James Lawton, news-agent, of North Whittington near to Chesterfield; I have the facts of his case down to the present time; he is now in the county gaol of Derby, and I have a copy of his conviction; it is, I think, the 10th conviction.

10. Within what time?—Within a period of 12 months; the date of this conviction is the 28th of January of the present year, in which occurs a matter strange to me as a magistrate; there are two convictions on the same day, one for a penalty of 20 s., and the other for costs; in one case there is a penalty of 20 s., costs and court fees 1 l. 17 s. 6 d.; in the other case there is for costs, distraint, execution, and other items, 2 l. 7 s., the one conviction being four weeks' imprisonment, the second conviction one week. The second conviction was to take effect after the expiration of the first imprisonment.

11. Are the costs connected with the first case of conviction?—They are.

12. What reason have you for supposing that that is the tenth conviction?—I have the most conclusive evidence upon that point; I presented a few days ago a petition to the House of Commons from this James Lawton, proceeding from the gaol at Derby, in which he sets out the fact that he has been 13 times summoned and 10 times convicted. On that I wrote to the governor of the gaol asking if he would supply me with the facts in that particular case, and I have his letter before me, in which the governor sets out that Lawton was once summoned and the case adjourned; one summons was abandoned; one was dismissed; there were 10 summonses and seven convictions in respect of one child, Sophia, and three summonses and convictions for another child, Frederick, making 13 in all. In the earlier cases Lawton paid the fines; I have a record of four payments at least; then it is stated to me, and I have reason to believe, that these repeated payments went beyond his means. His goods were then distrained, and in one case of distraint they took away a child's chair, a nursing chair, two common chairs and an American clock. The effects on which distraint could be made became exhausted, and he has since been sent to prison, and his conviction is now before the Committee. I would mention in reference to this man, Lawton, that he is a man of good repute in his neighbourhood; he is 52 years of age, he has been for 33 years a member of a Christian church, and I believe very nearly as many years a teetotaler; that is the information that I have respecting him, on which I thoroughly rely, because I have it from other sources than himself; I believe it would be almost impossible to adduce a stronger case of the power of a man's conscientious conviction than is adduced in the penalties which he has

paid, and in the sufferings which he has endured. In the three or four communications which I have had from Lawton, I recognise the letters of an intelligent and fairly educated man.

13. How many cases have you had brought before you altogether of repeated penalty?—A very large number; but I could not tell how many. I should think more than 50. It is, perhaps, not a fit suggestion for me to make from this chair, but I was going to suggest that you, Sir, as Chairman of this Committee, should move the House of Commons for a return of the actual number of convictions and penalties. Mr. C. F. Lane, of Grantham, writes as follows: "Will you kindly allow me to state my case. Having lost one child, a fine little fellow, as I am persuaded, through vaccination, I felt compelled, in the case of my present child, to resist the compulsory vaccination. In January last I was summoned before the magistrates, convicted and fined in the full penalty and costs, which I willingly and cheerfully paid, rather than run the risk of having my child's blood poisoned. Yesterday week I was again summoned, and again fined in the full penalty. Unless, Sir, your Bill is allowed to pass, what am I to do? I am a young man just commencing business, and cannot afford to pay 34 s. every two or three months. I must either stifle my parental convictions and have my child poisoned, or be ruined by continuing to refuse. They have threatened me again." Another case, that of Charles Washington Nye, of Chatham, presents some special features, as stated in the "Co-operator," a weekly publication, issued by Henry Pitman, at Manchester.

14. I suppose we are to understand, that except where you are making a quotation, you make yourself responsible for the correctness of what you state?—I may say that Henry Pitman, of Manchester, is personally known to me. He has been known in the literary world, too, for some years as the editor of this paper, and I am perfectly sure that anything which he puts forward here, under the signature of any person whatever, is the *bonâ fide* production of that person. This is a weekly publication, and a large portion of the facts which I am going to mention, I quote from this as being more convenient than the scattered documents. Mr. Nye writes as follows: "In December last I was sent to the Canterbury gaol for 14 days, for not having one of my children vaccinated. I had to assist the criminal prisoners in the prison work. At the end of my sentence I was turned adrift to go to Chatham, 28 miles, in the best way I could without a farthing in my pocket; since then I have been favoured with three summonses and a magistrate's order to have the child vaccinated. I treated the Vaccination Act with the utmost contempt, and I have good cause to do so. In 1866 I had two of my children vaccinated and they never had a month's health after it; they are in their graves now."

15. I understand that that extract which you have read from that work you believe to be a correct one?—I have not the slightest doubt of it.

16. How have those cases come to your knowledge?—The case which I am now mentioning to the Committee came to me by a communication about the middle of last year from the person himself, which I have not with me, but I recognise the facts as stated in this book which I have before me

me to be correct. "The Medway Guardians are at a loss to know what to do with such a sturdy opponent of compulsory blood-poisoning. This case was recently under discussion at the board, when the advice of the Chairman was, 'Let it drop.' Mr. Newcomb asked whether Mr. Nye had had his children vaccinated since the prosecution? The Clerk said he had not, and he thought it ought to come before the board again. The Chairman: Pray don't mention the case; if you do we must take it up again. Mr. Harvey: Then you are going to let him beat the board. The Chairman asked them not to bring it forward again; let them try and forget it. Mr. Harvey said he did not want to introduce it again. The Chairman: Let it drop." This seems to me to show the difficulty of administering the present law.

17. This is a newspaper report, is it not?—That is a newspaper report of the "Chatham News." The next fact in connection with the same man is on the authority of the "Co-operator." It did not drop; he was summoned again, and for the fifth or sixth time he has been convicted, and I know from other sources that four times he has been in prison, and during his imprisonment his wife and his other children have had to go to the workhouse.

18. Have you taken any steps to verify that statement, or do you merely take it as being a statement in a newspaper that is interested in the subject?—With regard to the fact that he has been four times in prison; I have a manuscript communication from some one, but from whom I do not at this moment recollect.

19. I understood you to state that into two or three of these cases you have personally examined, and you are generally convinced that at least 50 similar cases have been brought before you?—At least that number; I cannot mention cases with which I have come personally in contact, but I have several cases, of the truth of which I have not the slightest possible doubt, with specialties in them. The Rev. H. J. Allen was a Primitive Methodist minister, and a man of some standing and education, whose case came before the Queen's Bench, but I have not had any personal contact with the case. On the authority which we all admit, namely, the reports of the daily papers, I know that that case came before the Court of Queen's Bench.

20. Was that a case of repeated convictions?—Yes; that was the very point raised in the case.

21. How many convictions were there?—His was a second conviction certainly; it raised the legal question, whether a man could be twice convicted, and it was determined by the judges that he could.

22. Have you personally seen this man?—I have not, but he sets it out in a letter which is now before me, printed in this book, under his own hand: "I had to appear before the bench at St. Neots several times; I refused to pay, and was committed to prison for 14 days" (this is a minister of the Gospel), "but having paid the fine (5/), I was liberated"; and there are several cases of the same person having been convicted for the neglect to vaccinate two or three children. "In less than a month I had notice again, but refused to comply. The case was tried again on May 13th, and in spite of Dr. Collins's certificate they fined me again in the penalty of 1/ each child, including costs. When an appeal was made to the

Queen's Bench by my solicitor, Mr. Stimson, against the decision of the magistrates, their decision was confirmed. My solicitor's bill is 31/ 10s. 10d, and with other expenses altogether would amount to nearly 50/. Nevertheless, after all this persecution, expense, and unsought-for notoriety, I will defend my children from being poisoned, and will resist unto death this abominable and wicked law." That illustrates the action of the law, and the feeling entertained respecting it.

23. That is a letter which you have every reason to believe was written by him, having seen it in a publication?—I have not the slightest doubt of its perfect accuracy and authenticity. With the permission of the Committee I will mention a case, which I have direct from the parties concerned, to show to what persons summoned before the magistrates are sometimes summoned before the magistrates at Newcastle for neglecting to vaccinate; he pleaded his conscientious convictions, and the remark of one of the magistrates on that plea was, that "he once knew a man who had conscientious scruples against working so long as he could live by stealing, and he did not think that such a conscience should be respected." That was the magisterial reply given to a man of character and intelligence.

24. Who states that that reply was given?—I know it from the friends of the man to whom the reply was given.

25. That is to say, that the friends of the man have told you that that reply was given?—Yes; and it is reported before me here on the authority of the "Newcastle Chronicle."

26. Are the Committee to understand that it is upon the authority of the friends, or upon the authority of the report in the "Newcastle Chronicle," that you make the statement?—Both.

Martha Sexton, of Poplar, last year sent through me a petition to the House of Commons. She, in the absence of her husband, was summoned for neglecting to have her child vaccinated, and was convicted and was sent for seven days to prison.

I may say also, in general terms, that I know several cases where the parties have removed again and again to get beyond the jurisdiction of the magistrates. One man writes to say, that he makes it a system quietly to change his habitation, now and then, when he is threatened, in order to get rid of the obligation. Another case was specially brought under my notice, of a man who actually emigrated to avoid the penalties imposed by this Act.

27. You fully believe that such was the case?—I perfectly believe it. In one case the father of seven children is sent to prison, and of course a great deal of social suffering necessarily results from cases of that kind. In the "Manchester Examiner and Times" of June the 29th, a case is reported in which a magistrate showed unwillingness to convict, and added, "I sympathise with Mr. Bowman, and I do think it a great hardship, but as a magistrate we must carry out the law." It is known to me, as I suppose it is known to every Honourable Member of the Committee, that people of all classes are to be found scattered all over the country who are opposed to vaccination, and of course opposed to the law which enforces it. I know of magistrates, clergymen, and Dissenting ministers (the Rev.

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Mr. Molesworth is known, I dare say, to the Right honourable Chairman), officers in Her Majesty's service, of high rank, members of town councils in various parts of the country, tradesmen of every order, and vast numbers among the population at large, and all classes of working men and labourers who have expressed their objection to this law.

28. Do you consider that that is anywhere the view of a large portion of the population?—I cannot speak with definiteness as to that.

29. Do you know of any districts in which the prevalent feeling is against vaccination?—Not within my knowledge. I am bound to say that it is not so in the neighbourhood where I live; the prevalent feeling being there in favour of vaccination. The reason which weighed with me in asking the House of Commons to ameliorate the penalties was in the facts which I have given, and in the suffering which must necessarily come out of the facts. Either vaccination is complete protection, or partial protection, or no protection at all. If it is no protection at all, of course the law should not only be ameliorated, but abolished. Upon that point I give no opinion. But if it is partial protection only, clearly the penalties by which it is enforced should be gentle; and if it is a complete protection then it also seems to me to follow that the penalties should be gentle, inasmuch as none of the vaccinated are exposed to risk; nobody is exposed but the unvaccinated. In point of fact, the law, as it now stands, as the Committee will see, really comes to this: there is, in substance, perpetual imprisonment for conscience sake; for, that there is a conscience at work in resistance to this law, in the case of a large number of intelligent persons, and that there is a considerable amount of intelligent opinion against it is absolutely certain.

30. Is it your opinion that the objection of the parents to the vaccination of the children in many cases arises from the feeling that it is their duty as parents to preserve them from what they think a calamity?—Yes, that feeling is clearly and generally manifested.

31. You are not yourself opposed to vaccination; would you consent to it in the case of your own child?—I have done it to my own child, and I have been a party to doing it to a grandchild. My beliefs have been in favour of vaccination, but I cannot pretend to say that I have entered into a study of the question. My belief at this moment is that it is a good thing, but I would not like to come to a foregone conclusion in the face of the work before this Committee, where I shall have to give an opinion upon the evidence before them.

32. But according to your present views, and your past practice, you would encourage vaccination for the children who were under your care?—Yes.

33. I think I understand you to state that you have not made up your mind as to whether there should, or should not, be a law for compelling vaccination under certain circumstances?—As I have stated, I have been until this moment in favour of the law with a limited penalty, or such a penalty as would operate in bringing the children of the negligent and thoughtless within its operation, but not such a penalty as would be an oppression to those who object.

34. Does, or does not, your knowledge of the state of society in your own neighbourhood lead you to suppose that there are many parents who would allow their children to be vaccinated, or

would bring their children to be vaccinated in consequence of the existence of some kind of compulsory law, who from apathy or carelessness would not do so if there was no such law?—Yes, I think there would be a per-centage of that class to be found in every great population.

35. Mr. *Hibbert*.] You have referred to a case which has been decided in the Court of Queen's Bench; have you the judgment in that case before you?—In a condensed report only from "The Times."

36. Can you state it shortly?—"The Lord Chief Justice said that the Solicitor General had satisfied him that it was competent to the registrar to repeat his notice, and, therefore competent to the magistrates to repeat their order, and to make orders *toties quoties* until they were obeyed. He declined to discuss whether vaccination was good or bad; the Legislature had treated it as a matter of great importance, and had passed Acts to insure attention to it; that being so, he could not doubt that the intention of the Legislature was not merely to impose a penalty upon a person, once and for all, for having omitted to do that which the public health and safety required, but to enforce obedience to the requisitions of the law; therefore, he thought the order might be renewed, and the penalties might be repeated until the order was obeyed." Justices Mellor and Hannen concurred.

37. I think that you were a Member of the Committee which sat upon the present Vaccination Act, were you not?—I had the honour to sit with yourself on that Committee.

38. Perhaps your memory will serve you that one of the objects of the Act was to enforce the penalties more than once?—From my remembrance of the proceedings of the Committee, as I have already said, the object was only to secure the vaccination of children where the objection in the mind of the parent was not so strong that it could not be removed by the operation of the penalty, and that one conviction should absolve him from the results of disobedience of the law, by affixing its penalty rather than by compelling him to conform to its prescription.

39. Was it not the case that the previous Act which was repealed, imposed only one penalty for the vaccination not having taken place?—I do not remember; but I very well remember the discussion in Committee, and the reasons which were given, and which prevailed with the Committee, in favour of limiting the penalty.

40. With reference to the Leeds case, the case of Toulson, you stated that he was fined on several occasions, and that the child still remains unvaccinated; do you know whether in that case the magistrates ordered the child to be brought before the court?—I have a very elaborate report of that, but I do not remember that fact; I know that that question had been raised, and I believe there is no power to have the child before the court, and that in the absence of the child, there can be no conviction.

41. Do you speak from newspaper reports in respect to that?—Yes, and from my general impression.

42. With respect to Lawton's case you stated that he was now in gaol on his tenth conviction; does it not, according to the governor's letter, appear that he is there after a third conviction with reference to the child, Frederick?—Yes, seven convictions having been for another child.

43. Still

43. Still not for that particular case?—No, seven for one child and three for the other.

44. I understood you to say that you thought from reading those convictions that he was suffering or would suffer two terms of imprisonment for the same offence?—So it seemed to me from the documents.

45. Is it not the case that on the 31st of December 1870 he was summoned before the magistrates for not having his child vaccinated?—Yes.

46. Does it appear that the magistrates ordered his child to be vaccinated on or before the 14th of January?—Yes.

47. At that time was he not ordered to pay the costs of the summons?—Yes, amounting to 2*l.* 7*s.*

48. Does it not also appear that not having paid the costs on the day on which he was ordered to pay them, he was then summoned again before the magistrates to give the reasons why he had not paid the costs?—Yes.

49. At that time the magistrates issued a warrant to levy the costs by distress and there were no effects, and, therefore, he was imprisoned for the term of one month; that was so, was it not?—Yes.

50. So that on the first conviction the first term of imprisonment was really for the non-payment of the costs?—Seemingly that was so.

51. In the second case the magistrates having ordered him to have his child vaccinated on or before the 14th of January, he was then summoned before the magistrates for not having his child vaccinated before that day?—Yes.

52. And he was then ordered to pay a fine of 1*l.* for not having his child vaccinated?—Yes, and costs; 1*l.* 17*s.* 6*d.* altogether.

53. And not paying that amount, he was then imprisoned for a further term of seven days, was he not?—Yes.

54. So that the first conviction was really for non payment of costs in reference to the first summons, and the second conviction was for non-payment of the fine in the second summons?—I think probably so; but the point that I wanted to make out was, that there were two convictions on the same day; the conviction is on the 28th of January 1871 in the one case, and it is on the 28th of January 1871 in the other case.

55. You will find that on the 31st of December he was ordered to pay a certain amount of costs; not having paid those costs, he was then summoned to give his reasons why he had not paid them, and then a distress is levied upon his goods; there are no effects, and then he is imprisoned?—Yes; and that imprisonment is ordered at the very same time that he is ordered imprisonment for the non-payment of the fine, namely, the 28th of January.

56. The two convictions are separate, and have reference to two separate matters, though on the same day?—Yes, but my object was to show the spirit of severity as it appeared to me under which the law was administered; a man being sent to prison twice on the same day, one imprisonment to take effect after the other.

57. You say that you have known persons who have removed themselves out of the jurisdiction of the magistrates to other places, so as to escape being further brought before the magistrates; is it not the fact that wherever they are, so long as the child is unvaccinated, they will be open to proceedings being taken against them?—Quite

so, but in a new district they must be fresh proceedings; they go into a fresh district where they are unknown, and the condition of their child is unknown. A child being sent away, as is one of the cases recorded here (I think that of Towlson), and being out of the district and in other hands, the parent, according to the decision of Mr. Bruce, the Leeds magistrate, was not amenable to the law in Leeds for neglecting to have the child vaccinated, the child not being within his jurisdiction; but I think the decisions upon that point have been conflicting; some magistrates I believe, have convicted, notwithstanding the removal of the child.

58. You say that you wish the penalties to be gentle; will you state whether it is the amount of the penalty which you think should be less, or that there should be only one penalty inflicted?—My view was that the one penalty of, say, not more than 20*s.* should be the penalty of disobedience to the law in respect of one particular child.

59. You mean that after having paid the penalty once a person may be disobedient to the law for ever?—Yes, as regards that particular child, rather than the other alternative of having him imprisoned for ever, which the present law practically accomplishes,—especially as I think the payment of the penalty is evidence of his conscientious conviction, which should be respected in such a case the relation between parent and child being one of a most sacred and delicate character.

60. Do you think it would be possible to carry out a system of compulsory vaccination with one penalty such as you suggest?—It would be compulsory in every case where I think it ought to be compulsory, namely, in the case of the willing; it is not now compulsory in the case of persons who now object, as you will see, for a repetition of the penalty and repeated incarceration are now in the place of obedience to the law in one respect. Its penalties are affixed without accomplishing the objects of the law, and the child remains unvaccinated still; therefore it is not compulsory in the sense of securing the object which the law had in view.

61. Do you think that in that respect the law requires to be made more stringent?—I think that it is too stringent. I do not think that it is possible in this country to take a child from its parents by violence and have it vaccinated. I know of no other compulsion than taking the child by force.

62. And you think that that would be an objectionable proceeding?—I think that no House of Commons would dare to sanction such legislation.

63. Dr. *Lyon Playfair*.] I think that you have some doubts as to whether the English Act intended to enact a repetition of the fining power?—Yes; my impression was that it had not; but the judges otherwise interpreted it.

64. Are you aware that there can be no such question without regard to the Scotch Act?—I am not aware of that.

65. In the 18th clause of the Scotch Act, after giving power to vaccinate children who have not been vaccinated, the terms are, "If the parent or person having the care of any such child shall refuse to allow such operation to be performed, he shall for every such offence be liable to a penalty not exceeding 20*s.* Are you aware that the Vaccination Act has been carried

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out more extensively in proportion to the population in Scotland than in England?—I believe so.

66. Do you think that it would be wise if the Right honourable Chairman adopted your suggestion of moving for a return of the convictions which have taken place for double penalties in this country, to get such a return for Scotland?—Unquestionably; the more facts we have the better.

67. Would it not give us some evidence as to whether where the Act had been more stringently carried out, there might not be circumstances in the two countries which caused a very different public opinion?—I suppose we are either more or less enlightened than the Scotch, and thus we may have a different public opinion upon the subject.

68. Such a return might be expensive; but would it not be desirable to extend it to Ireland?—I should think so, for the same reason; the more information and the more knowledge we have the better.

69. With regard to your scheme for mitigating the Act, you think that the payment of a fine of 20s. would be a proof of obedience to the law, and that then the man should be relieved for conscience sake?—I think it would be proof of his conscientious objection to do the thing which the law required, and it would be obeying the law, not by following its requirements, but by bearing its penalty.

70. Would it not be a differential compulsion of enormous extent with regard to rich and poor, since, in the case of those members of town councils and high officers of the army whom you have mentioned, it would be nothing to pay 20s. for conscience sake, while it would be a heavy burthen upon the poor man?—No doubt, but that is true in all cases where the law is enforced by money penalties.

71. Would it not be the sale of an indulgence at a very trifling cost to the rich, and the sale of an indulgence at an enormous cost to the poor?—Relatively to their means of paying, it would be so, as in the case of all money penalties.

72. Sir *Smith Child*.] I understand that you consider that the Act should only operate as a pressure to induce careless and indifferent people to comply with its prescriptions?—That is my opinion.

73. Mr. *Muntz*.] With regard to the letter which you read, were the parties personally known to you?—Not personally known to me, in the sense of having personal interviews with them.

74. Have you spoken to them?—No.

75. Then all you know is, that a certain letter has been received signed by a certain name?—No, I have a good deal of collateral evidence of genuineness.

76. As to the facts, you merely know that certain letters have been received in certain names, but you have no personal knowledge of the parties?—No; in the same way as an Honourable Member receiving a petition addressed to the House of Commons from a person whom he does not know personally acts on his belief of its genuineness, and presents it to the House of Commons.

77. Mr. *Jacob Bright*.] You say that you know a great many persons who are resisting the law, and subjecting themselves to fines and imprisonment?—Yes, I know that to be the fact.

78. Are you aware whether those persons who

have been putting themselves in that position are the unlettered and most ignorant portion of the community, or are they tolerably instructed?—I believe rather the contrary. The very fact that they rely on conscientious objections is evidence of a previous mental and moral process leading them to that conclusion.

79. Are you aware that in the discussions which we have heard upon this question, and in newspaper writing generally, it seems to be taken for granted that the opponents of compulsory vaccination are those who are very ignorant, and who are not to be respected; does it not appear to you that that is the position which is generally taken up?—To some extent, I think, it is; but I think that it is hardly fair to say that that is even generally true, because it is very well known that very intelligent people, and people of good social position, have an opposite view.

80. As you seem to have been brought a good deal in contact with those opposed to compulsory vaccination, do you think that they are, in an average degree, intelligent and informed?—For the reason which I have given, I should think that they are above the average, inasmuch as the conclusions to which they come pre-suppose the capacity for, and the fact of a previous mental process.

81. Mr. *Taylor*.] You say that at least 50 cases of repeated convictions have been brought under your personal knowledge?—That is my opinion.

82. Are they specially from particular parts of the country, or from all parts of the United Kingdom?—From all parts of England.

83. Not Scotland or Ireland?—No.

84. You spoke, did you not, of some cases within your own knowledge of persons who have gone into other localities to avoid the action of the magistrates who had threatened them with penalties?—Not from personal contact with the parties, but from communications and personal interviews with individuals knowing the facts.

85. Is it your belief that magistrates in different parts of the country act practically very differently in reference to pursuing those who will not have their children vaccinated?—Yes. In some cases the reports of the proceedings before magistrates show a strong feeling on the part of the magistrates in favour of the Act by the highest maximum penalties being imposed upon people least able to pay; and in other cases you will observe that there will be a 1s. penalty upon a person; for instance, a solicitor in the Isle of Wight, a man of good standing, was fined only one shilling.

86. I think you mentioned also, that in one case at least, there was a suggestion on the part of the Chairman of the Guardians that the case should be let drop?—Yes.

87. So far as you know that change of locality would, in some cases, be effective in diminishing the chance, from the fact of magistrates not being so keen in pursuing the conviction in some localities as in others?—Yes. I should think that the motive influencing the removal would be that time must elapse before a new process could be ripened.

88. I understand you to be distinctly against compulsory vaccination altogether?—Yes.

89. But that you would desire that some penalty should be paid by those refusing to vaccinate, as evidence that they were not actuated by mere apathy?—Guarding myself by what may be

be the results of this inquiry, that would be my view.

90. In view of the enormous discrepancy between the rich and the poor, in the case of a fine would you be disposed in such cases to impose something more than a fine, namely, a temporary term of imprisonment for all as a means of equalising the evidence of the law?—I think not. It would in my mind imply far too much criminality on the part of the offender to commit him to prison direct without the option of a fine, and a criminality which I could not recognise.

91. Alderman *Carter*.] I suppose you know that it is the board of guardians that usually takes action, and not the magistrates?—Yes that is so.

92. So that it depends upon the following of the guardians' order, rather than of the magistrates' order; it would depend more upon the guardians of the district to which the man had removed than upon the magistrates of the district, would it not?—Yes, for initiating proceedings.

93. Mr. *Cave*.] In those cases which you mentioned as having come under your own knowledge, of people feeling convinced that their children had been injured by vaccination, and had died from it, do you know whether they said that from their own idea, or from the testimony of a medical man?—No doubt whatever it is the personal belief of the parents in those cases, and as to the medical testimony, I dare say they can get that too.

94. You have considered protection in the three lights: no protection, general protection, and perfect protection. Supposing that the protection of vaccination was general, do you not think it would be the duty of the Legislature to enforce it?—I wanted to convey the idea of partial, but imperfect protection, as distinguished from absolute and certain protection.

95. I think you spoke of general protection, that is to say, not universal, but efficacious in most cases?—That was not the idea which I wished to convey. The alternatives which I brought before my own mind were these: either that vaccination must be perfect protection or only partial protection. By "partial," I do not mean that there is absolute protection in any particular case and no protection in another, but that vaccination may ameliorate the conditions under which the small-pox may be taken.

96. Then, perhaps, you would not like to say whether you think that vaccination is a protection which is efficacious with respect to the majority of cases?—I would not venture upon a professional opinion.

97. Upon the supposition involved in my question, would you not consider that the Legislature ought, in its duty to the public, to enforce it?—With moderate sanctions, probably so.

98. Would it not be its duty to enforce it absolutely?—Not seeing the number of conscientious intelligent people on the other side.

99. Of course one very much respects conscientious people; but do you think the Legislature ought to consider the scruples of individuals in the case of danger to the public?—Inasmuch as the case supposed implies danger in a degree, and in a degree only, the severity, or otherwise, of the action of the Legislature would necessarily depend upon the degree in which the danger arose.

100. Supposing we decided from evidence before us, that in a very large majority of cases

vaccination was efficacious, would you not then consider that the Legislature ought to disregard the conscientious scruples of the minority on account of the danger which the public would run?—No, because I do not see the danger. You assume the effectiveness of vaccination. If vaccination is effective there is no danger except to the unvaccinated.

101. I assume only that it is effective in the case of the majority, and not in every case, and that the want of vaccination is dangerous as causing small-pox?—I think that the Legislature by enforcing vaccination, would be infringing one of the most sacred obligations of man to take care of his own child, if the father of that child believed that he was endangering the life of his child by submitting it to vaccination.

102. Do you think that however mistaken that individual might be, and however dangerous to the public his mistake, as we might be convinced, might be, yet that we ought to consider his conscientious belief rather than the general good of the public?—Yes, I think so; and I say that without any hesitation, first as a matter of principle, and secondly because I know no way by which you can practically give effect to your compulsion.

103. You think that no absolute certainty of danger to the public would justify a forcible interference between a man and his child?—If there were absolute danger to the public that would be upon the basis of the inefficiency of vaccination; and if vaccination be an inefficient process, there must be great wrong in enforcing it; the danger can only be in inefficiency, and if it is inefficient there is a destruction of the basis on which to repose a compulsory law.

104. Lord *Robert Montagu*.] Your evidence, it seems to me, has consisted of examples of convictions for disobedience to the Act?—Yes.

105. Some of those examples you have given of your own knowledge, and some of them you have given on the authority of newspapers and other periodical publications?—Yes, from what I have a right to regard as my own knowledge, from the communications of persons in direct contact with the persons who have been punished.

106. Then none of them are actually of your own knowledge, but it is only that you have received communications from the persons?—None from personal interviews, but several from direct personal communication.

107. Of those examples which you have given to the Committee, some you have given on the authority of letters which you have received from friends of the persons, and some on the authority of certain newspapers, and other periodical publications?—Yes, and some from letters from the persons themselves.

108. You have justified your giving instances from newspapers and periodical publications by this analogy: you say you present a petition to the House of Commons, believing it to be genuine?—Quite so.

109. As a Member of many years' standing, you are, of course, aware that all those petitions go before a Committee of Petitions, and that that Committee of Petitions examines each petition with the greatest care and scrupulousness?—Yes.

110. Have we a right to assume that you have taken very great pains to ascertain the genuineness of those facts which you put before us?—

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Yes, without any doubt; and if the conclusions of the Committee depended upon the substantiation of the facts which I have produced, I believe the facts would be put before the Committee by the evidence of the persons themselves.

111. Taking the examples in the "Co-operator" newspaper, will you tell us in what way you proceeded to ascertain the genuineness of the news therein contained?—By communications with the persons themselves, or by communications with their friends, the friends being frequently known to me.

112. In every case in which you have read us an example from the "Co-operator," you have applied to the persons, or to the friends of the persons, themselves?—No; I said otherwise in my examination in chief, as regards the cases to which I referred.

113. You merely gave it as news contained in a newspaper?—Which I believe as I believe a report of the Queen's Bench proceedings in "The Times" of this morning.

114. You have stated with regard to one of those persons, that he objected to have his child vaccinated because he believed that vaccination was blood-poisoning; was that person at all learned in medical science?—I do not know.

115. With regard to his opinion that vaccination is blood-poisoning, I suppose we must not attach too much weight to it, seeing that he has not any medical knowledge?—I want the Committee to understand that I have given and give no evidence whatever of a medical nature, and I did not adduce that statement to show that it was blood-poisoning, but to establish the conviction which exists in my own mind in the mind of the Committee, that he was a conscientious objector to vaccination.

116. He chose to suffer imprisonment, you say, for conscience sake, because he thought that vaccination was endangering the life of his child?—Yes; but I do not want to commit myself to the assertion that it was blood-poisoning.

117. Precisely; but I want to know how much you think conscience has to say to the question?—In such a case everything.

118. When it is a matter of loose and vague opinion, and a man has no medical knowledge and can have no certainty, nor even just ground of belief that vaccination is endangering the life of the child, what question of conscience can arise?—I do not know how we can otherwise bring our conscience into operation than through our intelligence. Our intelligence must be the basis of our conscientious action in every case; it may be weak or strong, but in every case of conscience there must be intelligence.

119. I thought that you told me that this man was not intelligent in medical matters?—Probably not; but his intelligence taught him that to vaccinate his child was a cruelty to his child.

120. Did he believe that it was blood-poisoning because certain persons had gone up and down the country asserting it to be so, or did he believe it from independent investigation?—I could not in many cases tell you the grounds of my own belief, nor can many of us do so; but however it was, it was through his intelligence, much or little.

121. Then it appears that there are two sets of persons; some believe that not to vaccinate is to endanger the life of the public; others believe that vaccination endangers the life of the person vaccinated. If the non-vaccinators happen

to be wrong, I suppose for conscience sake we must put them down and use compulsion?—I will leave the noble Lord responsible for that logic; it is not mine.

122. According to your theory there should be no compulsion to prevent persons from endangering the lives of others?—Unless vaccination be a protection, I know no grounds upon which we can enforce it. If it is a protection there is no danger.

123. That is the turning point of the whole case, is it not?—In either case it leads me to the same point, either that there should be no law at all, or a mild and tolerant law.

124. But is it not the turning point of the whole case whether vaccination is necessary or not?—Yes.

125. And that is a medical question?—Yes, that is a medical and an experimental question too.

126. *Chairman.*] Supposing that the result of the investigation of this Committee were to satisfy your mind that vaccination was a protection, and that the child which was vaccinated would be, reasonably speaking, secure from the terrible calamity of small pox, and that the child who was not vaccinated would be exposed to that calamity, would you still be of the opinion that the State had no duty to the child?—Yes; I think that the parent in any case where there is such ample room for divergence of opinion should be supreme, and that we go entirely beyond the prerogatives of State action when we intervene in such a case.

127. You think that in that case the responsibility rests entirely upon the parent, and that the State has no right to interfere?—Yes; unless, indeed, under the sanction of a mild penalty, he might be required to discharge what the State believes to be his duty.

128. Up to what age would you consider that this right of the parent to the disposal of his child, which in that case would lead to the exposure of his child to a great calamity, was vested in the parent?—I do not know that any of our ethical writers have ever determined when the parental prerogative ceases and the prerogative of the child begins.

129. Would you think it applied to a boy of 15 at school?—It depends upon the amount of intelligence and the amount of moral development in the child; I do not think it can be fixed at a uniform age.

130. You think that if the child was intelligent the State would owe a duty to it, but if it were not intelligent it would not?—I can make no such statement. The State now says that a child may not marry without the consent of its parents until it is 21; I will not define when parental duty ceases.

131. *Lord Robert Montagu.*] Does it depend upon the intelligence of the child?—To some extent.

132. The State owes a duty to idiots and lunatics who have no intelligence, does it not?—Not as superseding or over-riding parental duties, but in the case of a child the offspring of lunatics, the conditions would be such that I, believing in vaccination, would vaccinate, and could do so conscientiously.

133. *Chairman.*] What was the kind of return which you would wish for?—I believe that we could very soon get a return from all the magistrates' clerks of the convictions which have taken place in their respective courts for violations of this Act.

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Mr. WILLIAM JOB COLLINS, M.D., called in; and Examined.

134. *Chairman.*] ARE the Committee to understand that you are a Doctor of Medicine?—I am a Doctor of Medicine, of University and King's College, Aberdeen; Licentiate of the Royal College of Physicians of Edinburgh; a Member of the Royal College of Surgeons of England, and Licentiate of Midwifery of the Royal College of Surgeons in England.

135. How long have you been in practice?—I have been in active practice in the neighbourhood in which I am now residing for more than a quarter of a century.

136. What neighbourhood is that?—The Regent's Park; and during that time I have realised a position as a bedside practitioner, second to no one.

137. During your practice, have you had an opportunity of watching and considering the small-pox disease?—I have had 20 years' experience as a public vaccinator during no less than six or seven epidemic outbreaks of small-pox in this great metropolis.

138. Are you now a public vaccinator?—I am not.

139. How long have you ceased to be one?—I have ceased to vaccinate for some 10 or 12 years.

140. Has the experience which you have gained given you an opportunity of comparing the progress of small-pox amongst the vaccinated with its progress amongst the unvaccinated?—Yes; it has given me every opportunity of putting the so-called prophylactic to the test. For instance, in the years 1847, 1848, 1851 and 1852, I had an opportunity, as a public vaccinator in one of the largest parishes in the metropolis (St. Pancras), of watching the progress of the disease amongst the vaccinated and the unvaccinated, and by a curious coincidence, my attention was called to the clandestine inoculation of the small-pox. I watched the progress with more than ordinary care, because I found that this inoculating process with the varioloid matter had taken place both in the vaccinated and in the unvaccinated, and this was the result. About two-thirds of those inoculated cases had been successfully vaccinated, and I have found that where the children were strong and healthy, both among the vaccinated and the unvaccinated, they passed through the different stages of the disease with little or no constitutional disturbance; but those who were exposed to the more concentrated sources of infection, and who had been previously debilitated by the influence of vaccination shared a very different fate, for they had confluent small-pox in its most hideous form.

141. Does that answer apply to small-pox which results from its being carried from an epidemic that was raging, or small-pox that was the result of inoculation?—This was the result of inoculation; the small-pox at that time was epidemic.

142. And your comparison, then, of the relative immunity of the vaccinated and the unvaccinated applies not to those who were subject to the epidemic, but to those who had been inoculated in the manner which at one time was thought very desirable as a cure?—Yes, and especially approved by the College of Physicians.

143. And regarded as a means by which, with-

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out very great danger, the individual inoculated could be secured from the epidemic?—Exactly so.

144. Does the result of your experience during the time of that epidemic enable you to inform the Committee as to whether amongst those who caught the epidemic there was or was not an advantage in having been previously vaccinated?—The result of my experience at that particular epoch proved to me conclusively that there was no certainty in the operation. Some who were constitutionally strong, and not living in a polluted atmosphere, enjoyed comparative immunity from small-pox; but those who had been vaccinated, and even re-vaccinated, and who were living in the varioloid atmosphere, suffered dreadfully from the poisonous influence of small-pox; so much so that two cases came under my immediate notice of persons who died in the most hideous form of confluent small-pox after vaccination and re-vaccination.

145. Did you ascertain that that vaccination had been a complete operation?—Yes; I was at the bed-side. I always made it a rule, when consulted in anything connected with small-pox, to ascertain whether the patients who were attacked had any marks to lead us to infer that they had been vaccinated.

146. That is to say, that two of the persons whom you knew to die of small-pox had been vaccinated and re-vaccinated?—Yes.

147. Were you called in to visit many persons who were affected by small-pox?—Yes. At one time, when in general practice, I perhaps played a very prominent part in that particular style of practice, for I was frequently called upon in my capacity of public vaccinator.

148. Having had considerable experience as a physician in attending small-pox cases, you are aware of two cases of death from small-pox following after vaccination and re-vaccination?—Yes.

149. At that time you were a public vaccinator, were you the practitioner who vaccinated in those cases?—Yes; I vaccinated in both of them.

150. Had the vaccination been complete?—Yes.

151. And how long before was it?—The lady in question was vaccinated and re-vaccinated twice, and I performed both operations. She was vaccinated as an infant, re-vaccinated before the age of puberty, and re-vaccinated again, I think, at the age of 30 or 40, just before her death.

152. Did you vaccinate her as an infant?—No.

153. Were either of the cases in which you vaccinated successful vaccinations?—There is a vast difference of opinion as to that; some medical men say, for instance, Mr. Marston says that you cannot be thoroughly and efficiently protected unless you can exhibit eight well-marked thimble-like impressions, four upon each arm; I will venture to say that no one in this room can exhibit that.

154. Were those cases, in your mind, successful re-vaccinations?—Yes, no doubt about it.

155. Do you or do you not know that the first vaccination of the lady, as an infant, was a successful vaccination?—There were unmistakable scars to prove it.

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156. Have you seen any cases of small-pox during the present epidemic?—Yes; at the commencement of the present epidemic I was called upon to visit six children, all of whom were suffering from small-pox, and they had not been vaccinated. I learned from the parents that the eldest caught the small-pox when visiting at the house of a friend whose child died of small-pox after vaccination. It was curious that this case should present itself at this particular epoch. I watched the cases of those unvaccinated children carefully, and, contrary to everybody's expectations, they passed through the disease with little or no constitutional disturbance, were able to run about the whole time, recovered, and there is not a mark to be seen upon them: but the mother, who was in attendance, and who had been vaccinated and re-vaccinated, caught the small-pox, had it in a confluent form, and her life was despaired of. Two young men who were residing in the house at the time, and who had also been vaccinated, caught the small-pox; one of them had it in the confluent form and the other had it very badly; I did not attend those cases; but that was not the end of the chapter. A neighbour, who felt very indignant to think that so many children could be found who had not been vaccinated in their particular locality, in fact, threatened all kinds of things; but in order to mitigate the troubles of this particular family he volunteered to take charge of one of the children, saying to me at the time; "You know I have no fear of small-pox, because my children have been vaccinated." Strange to say, when the little girl that he took charge of was about to leave, his three sons were attacked with small-pox, and at my next interview I said, "Well, what is your opinion now about vaccination?" "Well," he said, "if I had not seen it in my own family I would not have believed it."

157. In those cases in which you say that you were aware that the persons suffered severely from small-pox after being vaccinated, did you yourself examine their arms, or upon what grounds do you say that they had been vaccinated?—I ascertained it by examination when I attended those patients.

158. I understood you in the first case to state that you were called in to attend six children who had caught it from some child who had been vaccinated?—The mother told me that her eldest child had been visiting at a house where a child died from small-pox after vaccination.

159. That was her account?—Yes.

160. In the next case you say that the mother suffered severely?—Yes.

161. You saw all the marks of successful vaccination?—Yes, and I gave her to understand that her life would depend upon the amount of protection that vaccination was supposed to possess.

162. Was it your opinion that it did do so?—I told her what the popular opinion was, and she was very much alarmed; it was not my opinion, certainly.

163. Are you aware that it is stated that with regard to the London hospitals, there is a great difference in the mortality between the vaccinated, and the unvaccinated?—Yes.

164. How do you account for that statement?—It must be remembered that each succeeding epidemic assumes a more virulent character, and they are more frequent in their visitations. About two-thirds of the people who are vacci-

nated and re-vaccinated, generally speaking, pass through the disease with little or no interruption, but the other third are a class of people who never after a certain time exhibit what I call the necessary marks which would lead any one to believe that they had been vaccinated or re-vaccinated; for instance, I saw two ladies this morning before I came to this Committee, and they would insist upon my looking at their arms to know whether they really were thoroughly and efficiently protected, because they told me (I knew nothing of them) that they had been twice vaccinated. I examined them very casually, for I had not much time, and I could detect no trace whatever; and that is the case of about one-third of all who have been vaccinated in my experience; if death occurred amongst any of those who had not this particular mark, they would be returned as not having been vaccinated. Now my friends, most of them, I am happy to say, are Conservatives, these two ladies were Conservatives, and they were very anxious indeed as good constitutionalists in case of death, not to be returned amongst the unvaccinated. Then again I must tell you that in my capacity, I have had occasion to visit large schools and different asylums, and I have taken the trouble to make myself acquainted with this so-called protection. In one case I took something like 50 at one visit, and some 200 or 300 at the next, and not one of them had really and truly what is supposed to be the full complement of scars, and in others it was nearly obliterated. Those are the cases which are predisposed to small-pox, and if they were to die, they would be returned as not having been vaccinated, and that I think accounts for the reports which appear from time to time in the different hospitals, that the mortality is greater amongst the unvaccinated than amongst the vaccinated.

165. Then it is clearly your opinion that the mortality is just as likely to occur with a vaccinated patient as with an unvaccinated patient?—Yes, but I have carried the thing a little further; I have made myself acquainted with what you call the unvaccinated people generally; and what do they consist of? they consist of the outcasts of society; people who have been living in prisons and workhouses, and who are physically and mentally low in the scale of human existence; who have not the power of resisting the disease when attacked, and who would bear no comparison to servants who are well fed, well housed, well clad, and taken especial care of. When small-pox breaks out among those vaccinated ones, they are physically stronger, and much more likely to recover than those who belong to the unvaccinated class.

166. Are you aware that it has been stated that the nurses in the Small-pox Hospital escape small-pox, and that it is supposed that they escape it because care is taken that they have been vaccinated?—Yes; it has been one of the stumbling blocks of the profession I think.

167. How do you account for that?—From what I can learn those nurses at the Small-pox Hospital have had the small-pox before they were appointed; but I must tell you that I have had a good deal of experience with nurses, and I know their physical capabilities as well as any man. At one time I had a staff that I was in the habit of employing who were so constituted in mind and body as to resist any infection. Those nurses that I employed were in constant attendance upon patients suffering from small-pox

pox and fevers; they had never been vaccinated, had never had the small-pox, and were living constantly in an atmosphere of contagion, and I think were proof against any disease; none of those ever had it, or have ever suffered in any way.

168. Am I to understand that you account for the fact that the nurses do not take the small-pox by the belief that the nurses have had the small-pox?—I am told so.

169. May I ask who told you?—I was told by the honorary secretary of the Anti-Compulsory Vaccination League, Mr. Richard Gibbs, and I have also read it in the public journals.

170. Did he inform you that he had heard it from the nurses themselves?—No; he said, "I am informed."

171. Then you believe that the nurses escape small-pox because they have had it, and you ground that belief upon the statement made by the secretary of the Anti-Vaccination League?—Yes; I do not know it from my own experience.

172. But you do not know from your own experience as a physician that the nurses at the Small-pox Hospital have had the small-pox?—I do not.

173. You have stated that you do not consider that vaccination is any protection against the small-pox; does your opinion go further, and are you opposed to vaccination as an evil in itself?—Yes; my opposition to vaccination is threefold. First, I found that cow-poxing was attended with innumerable evils, by deteriorating the system and weakening the powers of vitality, and that it often proved fatal. Secondly, I found that there was no certainty in its operation. In some constitutions it imparts or calls into activity diseases that would otherwise remain dormant, such as syphilis, scrofula, and other blood diseases; and in my opinion it has been instrumental in swelling the bills of mortality to a most alarming extent.

174. How long have you had that opinion with regard to the evil results of vaccination?—I have had an opportunity of making myself practically acquainted with it for more than a quarter of a century.

175. I think I understood you to say that you had ceased to be a public vaccinator?—I have abandoned the practice now for about ten or twelve years.

176. Up to that time I suppose you believed it at any rate not an evil?—I beg your pardon; I cautioned every one who came to me as to the danger attending it, and referred them to patients who had been suffering from small-pox who had been thoroughly and efficiently vaccinated.

177. Did you continue to vaccinate after you believed that it was useless?—I abandoned the practice gradually for this reason, because the public generally are in favour of it, and my patients generally were in favour of it; but when I abandoned it I gave up at least 500 *l.* a-year in the shape of fees, because I had the reputation of being somewhat hypercritical in the children that I selected. I made myself thoroughly acquainted with the parents' antecedents, so that those who sought the so-called protection at my hands had an opportunity of going into everything that was necessary to prevent what is generally supposed to be the case, and which I have had an opportunity of proving, viz., the transmission of disease from one patient to another.

178. Before you ceased to vaccinate, are we to

understand that you warned those whom you did vaccinate, that it was useless, and might do harm?—That it was attended with danger, and that frequently small-pox and death occurred after vaccination.

179. Do you consider that the general opinion of the profession of which you have stated that you are a member, is for or against vaccination?—I believe that the great bulk of the profession are in favour of it, and why? because they pin all their faith upon the Jennerian hypothesis; I will give you his very words, because that is the great point. Jenner, in the quarto edition of his famous work said, "Cow-pox admits of being inoculated on the human subject with the most perfect ease and security, and is attended with the singularly beneficial effect of rendering through life the persons inoculated perfectly secure against the small-pox." Now the great bulk of my professional friends pin all their faith upon what Jenner stated.

180. You have not had your own children vaccinated, I suppose?—Certainly not.

181. With regard to vaccination, do you desire to give the Committee any opinion?—I have re-vaccinated thousands, and when a young man, I had no objection to receive payment twice for one job.

182. When you say that you had no objection to receive payment twice for one job, what do you mean?—That I got two payments for bringing them under this so-called protection.

183. Do you mean that you got your patients to give you two payments for re-vaccinating them once?—No; it seems to be now generally admitted that the first vaccination is no protection.

184. You mean to say, that as it is stated that vaccination is only effective for a certain time, you consider that re-vaccinating would be one job?—I do.

185. Am I to understand by that, that supposing it was clearly proved that vaccination guarded against the small-pox for a certain number of years, and that at the end of those years it was desirable to re-vaccinate, you would then consider that it was one job?—I never found that amongst those who were exposed to the more concentrated sources of infection, it was any protection at all. I have often, upon each succeeding epidemic, been called upon to re-vaccinate, showing that those who had it on the first occasion were not satisfied.

186. Do you wish to give any cases of evils which have followed from vaccination or re-vaccination, derived from your experience as a public vaccinator?—Yes; I will enumerate many. I have often been called upon to prescribe for children suffering with syphilitic eruptions after vaccination whose parents were free from any constitutional taint; that is one of the evils which I have often met with. Diarrhœa is by no means an uncommon attendant upon vaccination, terminating, as I have found in many cases, in ulceration of the bowels and death.

187. In those cases in which you stated that a vaccinated child had syphilitic symptoms and that the parents had no tendency to disease, are we to understand that you made a personal examination of the parents?—Yes, a careful examination. Another complaint that is very common is a disease called eczema; it is a running scab. I have seen children hitherto healthy, with no trace of struma, after vaccination assume a scrofulous character, become bloodless and pale, and everything

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everything that was characteristic of a strumous habit. Convulsions is by no means an uncommon thing after vaccination. When the lymphatics become inflamed, which is also a very common thing, you get enlargement of the glands of the axilla, and abscess. Pneumonia is a common attendant on vaccination.

188. Do you think that there is any disease to which individuals are subject, which you have not seen as a consequence of vaccination?—That is not a question which I am prepared to answer; but a leading question was put to me as to what diseases I had seen ensuing after vaccination, and I should like to enumerate the whole of them. Delirium is by no means an uncommon thing, and erysipelas, and phagedenic ulcers; you will find on reference to Dr. Jenner's book that phagedenic ulcers were by no means uncommon things in his time; I do not think I have enumerated the whole of the diseases to which the human body is liable.

189. Dr. *Lyon Playfair*.] Not phthisis?—Pneumonia terminates in phthisis generally.

190. *Chairman*.] Have you any statement which you wish to make with regard to the origin of the vaccine, or the condition of the lymph?—The original source of the true vaccine of Jenner is the production of a diseased animal, the greasy heel of a consumptive horse.

191. Did you ever see anything analogous to this disease of an animal in the human subject?—I have often seen patients in the last stage of consumption with scrofulous joints, conical masses of proud flesh, from which exuded something resembling the fluid from a greasy-heeled horse, and with this same fluid from the scrofulous joint of the human subject, I have produced what some men would call a very good imitation of the Jennerian vesicle; it is a common thing for the joints to become affected, for large conical masses of proud flesh to make their appearance, and for a peculiar kind of greasy-looking secretion to run off from those sores; I was so struck with this resemblance, that I performed a series of operations to know whether there was anything analogous.

192. Did you ever vaccinate direct from the cow?—Yes; at one time I was in the habit of getting what they call vaccine direct from the cow, which is obtained by first giving the cow the small-pox, and then when you get this result the Jennerian vesicle is used for vaccinating purposes; that is what they call vaccine lymph direct from the cow. My experience proved that in the use of this matter from the cow, especially during an epidemic of small-pox, it often produced the disease which it was supposed to prevent.

193. I suppose we are to understand that you consider vaccination not only useless but an evil. Are we to understand that you believe that it has been instrumental in increasing infant mortality?—No doubt about it; especially when we take into consideration that the infant mortality, since vaccination, in large towns, is as much as from 45 to 50 per cent. before they attain their fifth year.

194. You believe that there are more children dying in consequence of the prevalent practice of vaccination?—I do.

195. Up to what age do you think that vaccination has that destructive effect?—I believe from the first introduction of it it deteriorates the system and weakens the power of vitality, and

lays the foundation of diseases which would otherwise not make their appearance.

196. Are you aware that it is stated that small-pox has been practically banished, by vaccination, from Scotland and Ireland?—In the last return from the Registrar General of Scotland there were several deaths recorded; I presume, therefore, that it has not altogether been banished as most persons are led to believe; and I saw in "The Times" the other day that it was at Belfast, so that it is not so.

197. I have seen it stated somewhere, in some publication which was issued by some gentleman connected with the movement against vaccination, that it was the cause of the death of 30,000 children annually; when you consider that it has increased the infant mortality, would you think that it at all approaches that number?—I have never made myself sufficiently acquainted with the statistics with regard to that matter, but I know that it is recorded by the Registrar General, that in large towns as many as 45 or 50 per cent. die annually before they attain their fifth year.

198. The following statistics are from returns made by the Commissioners of the Poor Law Board for Ireland: in Ireland, from 1830 to 1841, there were 58,000 deaths from small-pox; from 1842 to 1851, 38,000; and from 1852 to 1861, 12,000, in round numbers. The Act was passed in 1864, but in 1866 there were 187 deaths; in 1867 there were 20 deaths, and in 1868 no deaths; have you ever heard of those figures?—Yes, I am perfectly aware of them.

199. How do you account for them?—I do not believe that vaccination has been instrumental in it, or has anything to do with it.

200. But you do not dispute the fact that those deaths occurred up to 1861, when there was no compulsory Act, and that a very small number from 1866 to 1868 occurred after the compulsory Act?—There is no disputing the figures, although figures can be made to prove anything; but in this country, in 1854, the year after the Compulsory Vaccination Act, we had little or no small-pox, and most of my friends then came to the conclusion that it was to be stamped out; but two or three, or four or five, years must be allowed to elapse before the epidemic makes its appearance, and when it does, all those statistics fall to the ground. You prove conclusively that you keep it in abeyance for a time by a more rigid enforcement of sanitary laws.

201. Not by vaccination?—Certainly not.

202. Have you petitioned Parliament for a repeal of the Compulsory Vaccination Laws?—Yes, I petitioned in the usual style; I said, first: "That vaccination, both in theory and practice, is altogether a contradiction, and no protection against small-pox. Secondly: that delicate, strumous, or scrofulous children ought not to be vaccinated. Thirdly: that your petitioner proved, from actual experience and observation, that in some constitutions favourable to suppurative disease, instead of vaccination taking in the ordinary way, it has produced the most virulent form of confluent small-pox. Fourthly: that the theory of the present day as to a given number of cicatrices on the arm being any protection against the small-pox is altogether fallacious and contrary to fact, many deaths from confluent small-pox having lately occurred in his practice upon whom the full complement of scars were to be seen on both arms from the effects of vaccination

cination and re-vaccination. Fifthly: that the two diseases (variola), small-pox, and (vaccina), cow-pox, are not, as is generally supposed, antagonistic, but one and the same disease, which he proved over and over again by inspecting the arms of children who had been vaccinated in one arm and inoculated with small-pox in the other at the same time; the two diseases went on uninterruptedly in all the patients. Sixthly: that vaccination is often the medium of conveying many filthy and loathsome diseases from one child to another, and therefore ought not to be made compulsory."

203. Lord Robert Montagu.] I think that you said that you took out your diploma at Aberdeen, did you not?—I did.

204. Are you a Scotchman, may I ask?—No, I was born in Oxford.

205. Where did you study medicine?—I was articled to a gentleman in Berkeley-square, and I studied medicine in Berkeley-square.

206. Why did you not take out your diploma in London?—For this simple reason, because I wrote to be matriculated at the University of London, but they would not permit of my matriculating because I had not kept the full complement of terms, and the University of Aberdeen is the only university that would admit to an examination without residence.

207. Was it a very long examination?—Yes.

208. Did it last some days?—Some hours.

209. Four or five hours?—I should think it was, but I cannot say exactly; I think I went in at one o'clock and came out at five.

210. I suppose it is or was very much easier to get a diploma at Aberdeen than it is in London?—Not at all; I believe that two-thirds who went up on that occasion were plucked. I believe it is the most rigid examination, with the one exception of the University of London; they have a large staff of medical men, men who are connected with one of the finest hospitals in the world, and those men are the professors of medicine.

211. Then when you went up, all the examiners knew about you was from your answers at the examination?—I beg your pardon; I had letters of recommendation from all the professors of University College.

212. I suppose that when you got your diploma you gave your opinion of vaccination?—I never remember the question of vaccination ever being submitted to me on any of the diplomas which I have ever taken.

213. I think you said that the easy recovery of the vaccinated class from small-pox, or their immunity against small-pox, was due to their being a better fed class than the unvaccinated class?—Yes.

214. How could you trace their immunity to that better feeding?—Because I had the opportunity of making myself acquainted with the patients who were sent to the Small-pox Hospital.

215. But how do you know that it was due to better feeding, and not due to something else?—I believe that if you had the same experience as I have had as a surgeon of the poor, you would find that the class of people whom we send from the workhouses are the worst possible subjects. Those are the unvaccinated, and they bear no comparison to our domestic servants, who are generally shipped off the moment the attack takes place.

216. What I want to know is the certainty of the connection between the alleged effect and the

alleged cause; how do you demonstrate the connection between immunity from small-pox and good feeding?—Of the two classes of patients, one is physically strong and the other is the reverse, being delicate from constantly living in prisons and workhouses.

217. That may be granted; but that does not prove that it is the cause of the effect you mention, does it?—That is the result of my experience.

218. The result of your experience is, that the better-fed class do enjoy that immunity?—No doubt about it; it is a question of stamina.

219. You have stated that children who have been vaccinated have got syphilis after their vaccination; and you said that you examined the parents to see whether they had had syphilis; are you quite certain where you got the lymph from?—Yes, I got it from the National Vaccine Institution.

220. I suppose your opinion is that the syphilis was conveyed in the lymph?—The first case of post-vaccinal syphilis that came under my notice was in a child that was vaccinated from a friend's child who had constitutional syphilis. The first child had full Jennerian vesicles, all that Jenner would insist upon, and at the request of a friend I vaccinated from this child. Three weeks afterwards, those two children were brought to me again; in the case of the first, from whom I took the lymph, the sores had not healed, but had assumed a confluent form, showing conclusively that there was some constitutional taint lurking in the system; and the other child had sore throat and other eruptions of a syphilitic character.

221. But was the syphilitic poison conveyed in the lymph?—That child was vaccinated from a child who had constitutional syphilis.

222. Then all that that proves is, that you must not take vaccine matter from a child who has got syphilis, is not that so?—But we had no means of detecting that, because the child that I vaccinated from had the true Jennerian vesicles so much insisted upon by Jenner himself.

223. Did you vaccinate from arm to arm?—Yes; but the original vaccine came from the National Vaccine Institution.

224. Then two children got this poisoned lymph?—I vaccinated the first child with the vaccine obtained from the National Vaccine Institution. This child I saw on the eighth day with the true Jennerian vesicles; from that child's arm I vaccinated the second child.

225. Was there syphilitic poison conveyed in the lymph from the first child with which you vaccinated the second child?—Yes; that was through the vaccine lymph.

226. Had that first child, from which you took the vaccine, syphilis?—He came from syphilitic parents. There was nothing in the child's appearance to lead me to believe that the child was suffering from any constitutional taint.

227. Did you examine those parents?—I did.

228. And yet you took the vaccine from the arm of a child born of syphilitic parents?—Let me explain myself. The parents of those children were not examined until after the syphilitic symptoms made their appearance. This case naturally excited a good deal of curiosity, because the parents were opposed to vaccination, and then I made it my business to see the parents in order that I might ascertain what state of health they were in. The father I found had constitutional syphilis; large syphilitic nodes on his bones,

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and his first three children were born covered with syphilitic eruptions. This was the only child, and it was brought to me to be vaccinated. I vaccinated it with the vaccine lymph from the National Vaccine Institution, and then I vaccinated the other child from his arm.

229. Then, before you took the vaccine from the arm of the first child, to put it into the arm of the second child, you did not examine the parent?—There was no necessity to do so; syphilis never makes its appearance on the eighth day, the process of incubation being something like three weeks, and therefore I was unable to ascertain, until the expiration of three weeks, that this child had syphilis.

230. On the eighth day you saw the first child with a true Jennerian pustule, did you not?—Yes.

231. You were aware, that if that child had syphilis in his blood it would not appear until a fortnight afterwards?—Yes.

232. You saw the Jennerian pustule, and you knew there would be no appearance until a fortnight afterwards, if it had syphilis in its blood, and yet you did not take the pains to ascertain the antecedents of the child before you took the vaccine from the arm of the one child to put it into the arm of the other child; is that so?—No.

233. Will you explain it then?—I will explain it. Syphilis takes three weeks to show itself; the true Jennerian vesicle makes its appearance on the eighth day. I found that in the first child that I had vaccinated the three vaccine vesicles had assumed a confluent form somewhat resembling the old-fashioned Hunterian chancre; then I at first was made acquainted with the state of the constitution of the child, but the second had syphilitic symptoms already.

234. The facts of the case are these: in the case of the first child on whom you saw the Jennerian pustule on the eighth day, you were not at that time aware that the parents were constitutionally syphilitic, and you were not aware, until a fortnight afterwards, that the child had syphilis in its blood?—No.

235. So you took the vaccine from the first child and put it into the arm of the second child, and then the second child got syphilis three weeks afterwards?—I did not vaccinate the child three weeks afterwards. On the eighth day the vaccine vesicle is supposed to come to maturity; then there was nothing to lead me to believe that the child was suffering from constitutional syphilis.

236. And nothing to lead you to believe that the parents had constitutional syphilis?—Certainly not; and until those syphilitic symptoms made their appearance I did not put myself into communication with the parents, but afterwards I thought it my duty to see what was the cause of it.

237. You said, did you not, that diarrhoea has followed from vaccination?—Very often.

238. Could you connect that with vaccination, as effect with cause?—Anything that excites abnormal inflammation in delicate strumous children almost invariably produces diarrhoea.

239. All we know is that it is *post hoc*, but we do not know that it is *propter hoc*, do we?—No.

240. With regard to eczema and scrofula, I suppose if the poison of those two diseases is conveyed with the lymph the child will get it, but if it is not conveyed with the lymph it does not

follow that the child will get it?—I have told you that there is no certainty in the operation, but that vaccination may call into activity diseases that would otherwise have laid dormant.

241. That those diseases have shown themselves after vaccination?—Yes.

242. Why should they show themselves after vaccination?—Because you produce inflammation, and a good deal of constitutional disturbance.

243. Do you mean that if they were not already in the blood they would show themselves?—I believe that they are often conveyed through vaccine virus.

244. But if the vaccine virus is put into the arm without the poison of scrofula, then the child does not get that disease?—If there was any constitutional taint, or predisposition to this kind of disease, it would develop itself.

245. You have said that you took the matter from a pustule on a scrofulous joint, and that by means of inoculation you produce something like the Jennerian vesicle?—I have.

246. Was that on a dog or on a pig?—No, on the two patients in question, with their permission.

247. Then you vaccinated them with some substance that you believed to be poison?—No, it was from their own joints.

248. You took the poison from one part of the body, and put it into another part of the body?—Yes, for the purpose of seeing what effect it would produce. It is a curious fact, that healthy children generally resist the effect of the vaccine virus.

249. You say that it was something like the Jennerian vesicle, but you could not say that it was identical?—I believe that nine-tenths of the profession would have recognised it. It was circular in form; it had that peculiar translucent bluish-looking fluid; in fact, it had the characteristics, but it was not so full and so large as the ordinary vesicle.

250. You have spoken of persons who have been vaccinated getting the small-pox; how long before they got it had they been vaccinated?—I have seen children at all ages inoculated with small-pox after vaccination.

251. I am not speaking of those children who may, or may not have been vaccinated and got small-pox after being inoculated with small-pox contrary to the Act, but of the children or grown persons you have mentioned, who you say got small-pox after they had been vaccinated; how long were they vaccinated before they got small-pox?—At infancy, and also at puberty.

252. But how long were they before they got the small-pox?—I have seen the small-pox develop itself six weeks after vaccination.

253. And who vaccinated them?—I vaccinated some of them; not all.

254. But how do you know that it was six weeks afterwards?—Because I was in attendance as the medical adviser of the family.

255. Did you vaccinate them?—I did.

256. You say you can tell whether a person has been successfully vaccinated?—Yes.

257. Supposing a person has been vaccinated five or six or seven years before, can you tell then?—Of late years in some constitutions we find in about one-third of those who have been vaccinated no trace after a year or two, and if those patients died of the small-pox they would be returned as not having been vaccinated.

258. But

258. But I think you told me of some persons who got the small-pox after they had been successfully vaccinated?—Yes; it is by no means an uncommon thing.

259. Some of those may have been successfully vaccinated within a year before, and some may have been successfully vaccinated many years before; is that so?—Yes, in some cases in infancy and before puberty, and afterwards they have had the small-pox.

260. Has that been the case with regard to persons vaccinated by other practitioners?—Many of them by other practitioners.

261. With regard to those last persons, how do you know that they had been successfully vaccinated?—By the thimble-like impressions that are said to be the only protection.

262. Then you say that certain persons who have had certain thimble-like cicatrices in their arms have been attacked by small-pox?—Yes, and two have died of it with the full complement of scars of vaccination and re-vaccination.

263. But you do not know how long it was after they had been vaccinated?—As I did not vaccinate all the cases of small-pox I have attended I cannot say.

264. You say that to vaccinate a person diminishes his power of vitality?—No doubt about it.

265. How did you find that out?—In the majority of instances you will find that it accelerates the pulse, and produces a great deal of constitutional disturbance; and anything that does that lowers the vitality.

266. You say that whatever accelerates the pulse lowers the vitality; I suppose drinking two or three glasses of wine accelerates the pulse, and eating dinner accelerates the pulse?—Some persons have no pulse to accelerate. Taking sustenance is not an abnormal condition, but putting poison into the blood is an abnormal condition.

267. Then it is not whatever accelerates the pulse, but only some things that accelerate the pulse that lower the vitality?—Anything producing constitutional disturbance, or throwing patients into a feverish state.

268. I want to know how you arrive at this proposition, that to vaccinate a person diminishes his vitality; you say I know it, because whatever accelerates the pulse diminishes the vitality; and I mention something that does accelerate the pulse, and yet you tell me that that does not diminish vitality; how do you explain that?—I am not speaking of food now; I am speaking of blood-poisoning; anything that keeps up irritation and produces feverish symptoms is sure to accelerate the pulse.

269. Then it is not whatever accelerates the pulse, but any blood-poisoning that accelerates the pulse that reduces vitality; is that your proposition?—No doubt about it; it is a very common thing for pyæmia to take place after vaccination; wherever the veins become implicated in vaccination you get what is called blood-poisoning. Sir Culling Eardley, for instance, died from the effect of it.

270. You mean then that pyæmia reduces the vitality, but nothing else does so?—Anything that produces pyæmia produces constitutional disturbance.

271. In every case where a person is vaccinated is pyæmia produced?—Two-thirds of the patients that I have seen vaccinated, as I have told you in my evidence before, passed through the disease with little or no constitutional disturbance; but

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in the other third a good deal of debility occurs, and many other diseases are imparted or called into activity.

272. Then you mean that one-third out of the whole number you vaccinated got pyæmia?—I did not say anything of the kind.

273. Will you explain it then a little more fully?—I will endeavour to make myself understood; I have found that about two-thirds of the patients that I vaccinate passed through the disease with little or no constitutional disturbance; but that the other third suffered from its poisonous influence in a variety of ways. Amongst other complaints that were either imparted or brought into activity we had pyæmia, eczema, phagedenic ulcers, and so forth.

274. Now we come back to the question that I was asking you; your proposition was that vaccination diminishes the power of vitality; it appears now from your answer that two-thirds of the vaccinations that you performed did not diminish the vitality, and that it is only in the minority of the cases that the vitality was diminished, and then you pass that general proposition on all the cases; is that so?—The question I was asked by the Right honourable Chairman was whether I could enlighten the Committee as to what diseases were called into activity and conveyed through vaccine lymph.

275. You have enlightened me already upon that point, and told me that the poison of those diseases was conveyed together with the vaccine lymph, and that then the diseases ensued?—Not always.

276. But you say it is so in the generality of cases, so that perhaps that which diminishes the power of vitality is vaccinating not with pure vaccine lymph, but with vaccine lymph, together with the poison of certain diseases?—I cannot understand how anything pure, so-called, can come from a diseased animal.

277. Mr. Cave.] I think in one or two of your first instances you laid a great deal of stress upon the constitution of the children that had small-pox; you said that those who were strong got through it, and that the others died; have you considered very carefully whether, as regards strength of constitution, there was any difference between the vaccinated and unvaccinated patients?—Yes; I stated, I think, that in those cases of inoculation those who were strong and healthy, both in the vaccinated and unvaccinated, suffered very little from its influence.

278. But have you considered whether in the case of patients equally strong, there is any difference between the vaccinated and unvaccinated?—Both the vaccinated and the unvaccinated who are strong pass through it without any apparent disturbance; the system seems to be proof against it.

279. But is it generally your opinion that it makes no difference?—The strong and healthy resist the disease, whereas delicate children suffer a good deal.

280. And in the case you gave us of the children who recovered, and the mother who afterwards very nearly died, would you not consider that the weakness produced by long nursing would have an effect?—But she was under the protecting power of the vaccine virus, though no doubt her constitution was weakened by the nursing.

281. It is not uncommon in all diseases for a nurse to die after successfully nursing a patient, is it?—It is very common.

282. You

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282. You mentioned that syphilis was sometimes dormant in the system; is it a common case for syphilis to be dormant in the system of a person and not to show itself through life?—In the case of children born of syphilitic parents it almost invariably makes its appearance in the first few weeks after birth; but in some constitutions it may remain dormant for weeks or months.

283. You rather laid stress upon your opinion that vaccination, although it might not inoculate the child with syphilis, might cause syphilis, because syphilis was already dormant in the system?—No doubt it might call it into activity.

284. In the case of a person of, say, 15 or 16 years of age, could syphilis have remained dormant all that time and then be caused by vaccination, if vaccination did not inoculate it?—I have never seen any cases of that kind.

285. How soon should you consider the danger was over of the syphilis that was dormant appearing?—After the age of puberty. It would depend upon whether the patient was suffering from his own indiscretion or whether it was constitutional.

286. How late in life could hereditary syphilis appear that was dormant in the system from birth?—Hereditary syphilis generally makes its appearance in the future offspring after marriage; we get at facts that were concealed before. In the father himself no suspicion has ever been excited as to any syphilitic taint until his children have exhibited the symptoms, and undoubtedly have it by constitutional hereditary transmission.

287. Then I understand you to say that it may pass over a generation and then reappear?—Undoubtedly, I have seen syphilis where I could find no trace in the parents, but I have found upon inquiry that the grandfather and grandmother had suffered in some way, or that there had been some constitutional taint in the previous generation.

288. Do you know that it is a general opinion among medical men that the lymph cannot convey any other disease?—That is the general impression, but I have seen syphilis conveyed through the vaccine virus.

289. But you stated just now, I think, that hereditary syphilis develops itself in almost every case in three weeks after birth?—No, I say that if you vaccinate a child and convey through the vaccine virus any syphilitic taint it makes its appearance in the third week.

290. If the syphilis was dormant in the system at birth, I thought you said it made its appearance generally a very short time after the birth?—Yes, a week or two.

291. And generally speaking, if it does not make its appearance a week or two after birth the person may be considered safe for life, is that so?—I did not say that.

292. If it must develop itself in three weeks, is not that so?—I did not say that it must develop itself.

293. You stated that syphilis was frequently dormant in the system of the child, that is to say, hereditary syphilis and not that from inoculation; how soon after birth does that hereditary taint generally show itself?—In the first week.

294. If it did not show itself in that first week might you consider the child safe from hereditary syphilis?—That would depend entirely upon circumstances; if the child is well nourished and well fed, and well attended to, in all probability the disease would lay dormant a considerable time.

295. How soon would you consider that if the symptoms did not appear the child would be safe from hereditary syphilis?—If the taint is already in the system it will be a question entirely of circumstances as to when it would develop itself. The result of my experience is, that in children born of syphilitic parents we see the disease show itself in the first week or two.

296. Does your experience lead you to know how soon you might pronounce a child safe from hereditary syphilis if the symptoms did not appear?—I am not aware of there being any given period. I said that in the ordinary way in children born of syphilitic parents it shows itself in the first week or two.

297. What are the exceptions to that?—It may remain dormant, for anything I know, for any number of years; but, in a general way, it shows itself in the first week or two.

298. But you consider that it may remain dormant for any number of years, and for the whole of life, in fact?—I do not say that.

299. But you said, just now, that it might appear in the grandchildren?—We know that many persons inherit it from their ancestors after one or two generations. It does occasionally skip a generation.

300. Is it your opinion that it might occasionally skip a generation?—No doubt.

301. Then it might remain dormant during the whole of life?—Yes.

302. You stated, with regard to infant mortality, that it had increased since vaccination; upon what do you base that opinion?—First, upon the Registrar General's return, that 45 to 50 per cent. of the children die before they attain their fifth year.

303. In what particular place is that?—In Liverpool, I think, and in most of the large towns.

304. Is that per-centage larger or smaller than it formerly was?—Larger, I think.

305. Mr. *Candlish*.] Has infant mortality increased since vaccination?—I think so. I simply state what has been over and over again printed by the Registrar General.

306. You simply say that infant mortality is now large?—No doubt, up to the age of five.

307. Are you in a condition to say what it was before vaccination was practised?—No, I have not studied that.

308. Then you would hesitate to say that any increased infant mortality is due to vaccination?—I think that the mortality of infants is considerably increased by the poisonous influence of vaccination. That is my impression from watching the progress of the disease.

309. But you have no knowledge of the conditions of infant life before vaccination was practised?—I have not.

310. Then you are not in a condition to draw any inference, since you cannot compare the two periods?—No.

311. You say that the infant mortality is from 45 to 50 per cent. of the total deaths in large towns; I happen to know that you are correct with regard to the town with which I am connected, but what is it in the country?—I do not know at all; I am not acquainted with any statistics.

312. Whether it be 45 or 50 per cent. in the country or not, you cannot tell?—I cannot.

313. Would you not require that fact to enable you to draw general conclusions?—Yes, certainly it would be very interesting to know what the mortality is in the provinces.

314. May

314. May it not be true that the heavy infant mortality in large towns is due to the unfavourable sanitary conditions in which infant life exists in large towns?—I have no doubt that that accelerates it wonderfully.

315. Then that will get rid of vaccination as a cause of mortality, will it not?—Not altogether.

316. If vaccination be the cause, you would find the mortality in town and country pretty much alike, would you not?—No doubt.

317. You know, do you not, that, in point of fact, half the human race does not die before five years of age?—Certainly.

318. Then it will follow, will it not, that, half dying in the towns, a very much less proportion will die in the country?—Just so.

319. But vaccination is pretty uniform over the country, is it not?—Not altogether.

320. Have you any knowledge as to that as between town and country?—Of course, vaccination now is generally enforced, and I believe that, by the enforcement of the Act, from the diseases that are constantly brought under my notice after vaccination, it has been instrumental in swelling the bills of mortality.

321. You say that the infant mortality in towns is very much greater than in the country, as it must be, inasmuch as it is one-half in large towns, and yet one-half the human family does not die until after five years of age; and vaccination being as prevalent in the country as in towns, it will certainly follow, will it not, that vaccination is not the cause of the great rate of mortality in towns?—Well, I should say not, according to the statistics.

322. Up to this time I think you have conveyed to the Committee your belief that the heavy rate of mortality of most infants in large towns was owing to vaccination?—I believe it still.

323. But you have just said that you think differently?—I am not in a position to say what the exact mortality in the towns is, but as one-half of the population do not die before the age of five, of course the inference drawn is, that it cannot be the effect of vaccination, but I am speaking of my experience of the poisonous effect of vaccination.

324. Are you aware that the evidence taken before this Committee may govern and stamp legislation to which 30 millions of people may be subjected?—Yes.

325. Nevertheless, you are content to put the evidence you give, which may be the basis of that legislation on mere generalisations of this nature; do you think that safe; or should we not, having in view the extremely important results which may follow from this inquiry, have specific and accurate information?—No doubt.

326. Do you not feel that you are merely generalising and not giving us the results of scientific inquiries?—I do not know whether you call it scientific or not, but it is the result of my experience.

327. We discover now that the fact is not as you state it, and that there is not an increased mortality in towns owing to vaccination; is that so?—That is my impression.

328. With regard to nurses, I understand you to state that the protection which nurses in small-pox hospitals enjoy is the problem which puzzles the profession; in the first place, is it true that the nurses employed in the small-pox hospitals are vaccinated?—They are said to be vaccinated and re-vaccinated.

329. The problem rests upon the fact that they

are vaccinated and do not die, does it not?—That is the inference.

330. Then the facts are correct, first, that they are vaccinated, and secondly, that they do not die?—That is inferred.

331. You admit the stumbling-block?—I believe that others might be placed in the same relationship as the nurses of the Small-pox Hospital who have not been vaccinated, and that they would be quite as capable of resisting the disease as those who have been vaccinated.

332. Have you facts to support that belief?—Yes; the nurses whom I have been in the habit of employing.

333. In any hospitals?—Not in small-pox hospitals.

334. Then you are only generalising again, that you think that it might be possible unvaccinated nurses would not take small-pox?—I do.

335. Then would you have that general opinion govern the legislation of this country against the stumbling-block to which you have referred, namely, that nurses in small-pox hospitals are always vaccinated, and that no nurses in small-pox hospitals die of small-pox?—I think that the best answer that can be given in opposition to vaccination is the epidemic which is now raging.

336. Would you have that general opinion govern the legislation of this country against the stumbling-block to which you have referred, namely, that nurses in small-pox hospitals are always vaccinated, and that no nurses in small-pox hospitals die of small-pox?—I am still of the same opinion that nurses who have not been vaccinated, or subjected to this so-called protection, would, if placed in the same relationship to the nurses employed at the small-pox hospitals, enjoy the same immunity.

337. Then, as a professional man, you wish to leave it as your answer that the unvaccinated nurses are as absolutely protected as the vaccinated ones against the infection?—Yes.

338. In answer to a previous question you said that according to your belief these hospital nurses did not take small-pox because they had previously had it?—I think some one told me (but I have no facts as to that) that they had had the small-pox before they were appointed.

339. You really would not expect this Committee to accept as conclusive your answer, namely, that you were told by somebody else, who was also told?—Certainly not; but that was the inference drawn.

340. Then you are now willing to accept the official facts from those hospitals as a correction of the statement which you are just now making?—Yes.

341. Mr. Alderman Carter.] I suppose you are aware that the infant mortality that ranges from 45 to 50 per cent. is confined to a few large towns?—I have seen it recorded, I think, as regards Glasgow, Edinburgh, Liverpool, and two or three others.

342. It is confined, in fact, to a very few large towns. According to your theory, should not infant mortality be nearly the same all through the country?—Yes, if the same laws of vaccination were enforced.

343. I take it that the vaccination laws are enforced as strictly in the country as in the towns, and that, if anything, the people will escape in the towns. If that be so, should not the mortality of children be the same in the country and in the towns, according to your theory?—Yes; no doubt about it.

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344. From your own experience, do you know anything about the condition of the large towns, so far as sanitary matters go?—They are very defective; and the more defective they are the larger the mortality. It is not only confined to infants, but applies to mortality generally.

345. May not the mortality of the children depend very much upon the condition of the mothers, for instance, who may work in mills in a close confined atmosphere?—It may have something to do with it.

346. Dr. Brewer.] I think that in reply to a rather important suggestion, namely, that Dr. Marston had given his opinion, and made a positive statement that no cases of small-pox among the nurses at the Small-pox Hospital had occurred the answer was that nurses resist all infection; do you think that hospital nurses are powerful to resist all infection?—I think that is a mistake; I said that the staff of nurses that I employed, who had not been vaccinated, resisted the small-pox and other infectious diseases.

347. Nurses certainly do not resist all infection, nor are they proof against all diseases, not even infectious diseases, because the year before last the Fever Hospital lost several nurses from relapsing fever, and this year from scarlet fever, and it is a fact, therefore, that the hospital nurses do not resist all infection, but they die almost in the proportion of people in private life; therefore that cannot be exactly your answer; the next is that you make a very serious statement indeed, that you believe that there is an increased mortality in consequence of vaccination, and you quote Dr. Farr; but are you aware of this reply of Dr. Farr's: "Deaths from fever have progressively subsided since 1771; and further, the combined mortality from small-pox, measles, and scarlatina now is only half as great as the mortality formerly occasioned by small-pox alone"?—Yes.

348. Are you also aware that Dr. Farr says that deaths from fever and scarlatina are less now than they were before vaccination?—I was not aware of that, but I am aware that it is stated that the combined mortality from small-pox, scarlet fever, and measles is only half as great as it was formerly from small-pox alone; this is due to the disease of small-pox being better understood, to the banishment of the practice of inoculating for small-pox, and to the treatment adopted also being so much more rational, and not, as we are led to infer, to the employment of vaccination.

349. Chairman.] Then you do not dispute the fact, but give a different ground for it?—I say that it is due, not to vaccination, but to the abandonment of inoculation for small-pox.

350. Dr. Brewer.] The deaths per million of the population from small-pox before vaccination were 3,000; that would make with the present population at least 60,000 deaths. Now, from 1838 to 1840, both inclusive, there were 770 deaths per million; from 1841 to 1853 only 304 deaths per million; and from 1854 to 1865 only 202 per million; do you know those statements?—Yes; that is due to the abolition of inoculating with small-pox. When we inoculated with small-pox we kept the disease constantly amongst us. In fact, of those inoculated about one in 40 died, and that in a great measure will account for the mortality, but when they abolished the practice of inoculating, small-pox was not epidemic. The result was that apparently it afforded some protection against small-pox.

351. But we had three epidemics in those periods?—Yes.

352. And yet the per-centage of deaths only bears the proportion of 202 to 3,000. When London had a population of 250,000 there was an annual death from small-pox of 1,780, but within the last 13 years there is an average death in a population of nearly 3,000,000 of only 759; are you aware of that?—It is due, as I said before, not to the employment of vaccination, but to a more rigid observance of sanitary laws, and to the fact of the abolition of inoculation for small-pox.

353. But that would affect all fevers indiscriminately, and especially those fevers which you say you have seen produced by vaccination; but the disproportion being so marvellous that there can be no doubt whatever that there is a direct pathological connection between cow-pox and small-pox, you do not deny that vaccination undoubtedly destroys the susceptibility to small-pox?—I do.

354. With all those facts?—With all those facts. I believe that if you wished to test the efficacy of vaccination the only way would be to go into those particular localities where the disease is raging, and that is the only way to arrive at a practical conclusion as to its so-called protection.

355. There are certain classes of fatalities which we call classes of death. Small-pox, before vaccination, came in the fifth class of death, that is to say, out of 18 or 19 causes of death small-pox came fifth, producing the fifth greatest number; but after vaccination, and especially within the last 15 years, small-pox comes in the 18th class; if there is no connection between vaccination and small-pox, how on earth do you account for that?—Simply because the disease is better understood, and the treatment adopted is more rational.

356. So are fevers and all sporadic disease; but what could make it jump from the fifth class to the eighteenth class?—The abolition of inoculation.

357. Mr. Taylor.] You have been a medical practitioner for 25 years, and for 20 years of those you have been a public vaccinator, have you not?—I have been a medical practitioner for 25 years, and out of that I was for 20 years a public vaccinator.

358. You have given up the system of vaccination for some 10 or 12 years?—Yes.

359. Those dates are hardly right, then, I think?—Yes, I think so.

360. You gave up the system of vaccination, I understand, because you believed there was no certainty in it?—Yes, and no protection.

361. And because you believed that there was no difference between those vaccinated and those unvaccinated in regard to liability to the disease and fatality when taken?—No more susceptible when vaccinated from varioloid virus than from the vaccine lymph. During the epidemic periods I have no difficulty in producing re-vaccination, and, if so, they are just as liable to take the disease, and are not insusceptible to either.

362. I think you said, too, that of those vaccinated, about two-thirds went through all the stages of the complaint without mischief, and that as regards the one-third, there was an impossibility in telling from the marks in the arm whether they had taken it or not; in fact, that it might be said, if they died, that they had not

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been vaccinated; must not that lead to great uncertainty as to the efficacy of vaccination?—Certainly.

363. Since you became convinced that there was no absolute efficacy in the system of vaccination, you went much further, and you concluded that vaccination, apart from its efficacy in preventing small-pox, lowers the power and induces diseases of all kind?—The fact is continually brought before me from the uncertainty of the operation of the vaccine virus.

364. I observe that the answer that you gave as to its lowering the power and rendering the body liable to certain diseases, was apparently a medical axiom that when artificial disturbance of the constitution was produced and fever ensued, that was known permanently to lower power and to induce liability to disease; but I presume that while you practised vaccination you did so under the impression that its efficacy with regard to small-pox would atone for that constitutional mischief which was inevitable; that was so, was it?—Yes.

365. You also came to the further conclusion that it is likely to produce, or make to grow, the hitherto dormant seeds of positive disease, such, for instance, as syphilis?—Yes.

366. You would not be surprised if after a child was vaccinated it became subject to certain eruptions, such as eczema or syphilis?—Certainly not.

367. Would you imply from its being so that there was any constitutional taint in the system, or that the eruption proceeded from vaccination?—What I stated was, not that it imparted disease, but brought into existence diseases.

368. Whether syphilis lying dormant in the system was brought out by this disturbance, or whether it was the direct result of vaccination from a child with constitutional syphilis, must be then, as I understand, a mere matter of theory?—It is a matter of fact, because the child from whom I vaccinated having syphilis, the syphilitic virus was conveyed to the second child.

369. But had you, on examining the parents of the first child, found no evidence of syphilitic taint, how would you have accounted for the appearance of disease in the vaccinated child?—I have no doubt that frequently vaccine develops syphilitic ulcers which would otherwise be dormant.

370. Apart from the examination, therefore, it would be a pure matter of theory whether the child from which you vaccinated was actually suffering from syphilis, or whether the child operated upon had the dormant seeds of syphilis in its own constitution?—There was nothing to lead me to infer that there was any constitutional taint amongst the parents of those children.

371. If you had not discovered constitutional syphilis in the parents of the child from which the lymph was taken, it surely would not have been possible for you to assert that vaccination must have rendered active the dormant seeds in the constitution of the vaccinated child?—No.

372. Dr. *Brewer*.] You have an opinion that a pure Jennerian vesicle can be produced by a modified influence, and that that pure vesicle can contain the seeds of venereal disease?—Yes.

373. Of course you know the experiments which have been tried both here and elsewhere upon this very subject; unvaccinated persons, who happened to be suffering from chancre, have been vaccinated, and vaccine vesicles have been raised in close contiguity to the chancre, and from vesicles so raised, vaccinations have been performed; but never has it happened on a single occasion that syphilis, or that any other result than vaccine has followed the use of the vaccine lymph, which was purposely taken from a syphilitic subject, and this is confirmed by men of the highest possible position, and the largest possible amount of experience, Acton, Lee, West Marston, and the rest; do you believe that?—I believe if I had seen nothing of those whom I had vaccinated beyond the eighth day, I might have said that; but if it does not make its appearance until the expiration of three or four weeks; and many a person has passed through the vaccination in the regular way, and has been certified as having been properly vaccinated, who was afterwards covered with syphilitic sores.

374. Do you know that one case only is recorded, and that a French case of any known disease being communicated with the vaccine matter, that being a young woman in La Charité, who, at the very time of vaccination, was suffering from *une affection utérine*?—Yes, I believe you will find on reference to Ricord's works that there are several such cases.

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Friday, 3rd March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Sir Dominic Corrigan.

Mr. William Edward Forster.
Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER IN THE CHAIR.

Mr. WILLIAM JOB COLLINS, M.D., recalled; and further Examined.

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375. Mr. *Jacob Bright.*] WITH regard to the hospitals, I think you admitted that there are many more deaths among the unvaccinated than among the vaccinated in the hospitals?—No doubt that is recorded.

376. But, on the other hand, you endeavoured to show that what are called unvaccinated people had really been vaccinated?—Yes; and that there is no trace after a certain time in certain constitutions.

377. But the reply to that, on the part of medical men generally, would be, I suppose, that those who you say were vaccinated were not properly vaccinated?—Because they were returned as unvaccinated.

378. Then, that would appear not to tell against vaccination, but to show that the system is imperfect, or the medical man careless?—No doubt vaccination has been performed in a very careless manner for very many years.

379. The position that you take in the matter does not seem to me to tell against vaccination?—Even among those, I think, whose constitutions are favourable to the development of the disease, there is in after life little or no trace left. For instance, I think I said that about two-thirds of the cases that came under my notice went through the disease with little or no interruption, but in about one-third of them the disease did not take in the regular way; there were not the true vesicles, although you might have the full complement of them, because they had become absorbed or had left very little trace. Those persons would be some of the particular parties to whom I referred who never exhibit a full complement of scars. I very much question whether you could fully develop them; the consequence is, that you could never say that they have been thoroughly and efficiently vaccinated from their peculiar idiosyncrasies, and those would be returned as unvaccinated in case of death.

380. Do I rightly understand that you consider that there is a given proportion of human beings who are not capable of being what is called properly vaccinated?—Yes; you cannot give them, as it were, a disease by Act of Parliament; nothing in the world will induce the system to take up the disease and develop it in the regular way.

381. And those persons would not then be protected by vaccination?—No; they would be the very first to take variola, and that is the result of my experience. I have re-vaccinated them up to the age of puberty three or four times, and you get the same kind of abortive vesicles, and you never get a satisfactory result.

382. You have a large practice, you say?—Yes.

383. Amongst what class of persons?—Now I am practising only as a physician; but in the early part of my career I was a general practitioner.

384. Do you happen to know how many cases of death by smallpox you have seen in your own experience?—When I was a general practitioner I insisted upon every case that presented itself being removed, believing that the only safeguard would be to isolate all that fell sick, and they were generally referred to the hospital, where I had no further control over them; but since I have been in practice as a physician only, of course I have been brought into contact with a different class of patients. The two cases that I alluded to the other day, I attended until they terminated fatally.

385. Are those the only cases which you have attended that have terminated fatally?—No; but the only ones lately.

386. Amongst those cases that you have attended that have terminated fatally, were there as many fatal cases amongst the vaccinated as amongst the non-vaccinated?—I do not think that I am altogether prepared to answer that question.

387. Could you tell me whether the opposition to vaccination is confined mainly to this country, or does it exist in other countries?—I believe so; but I have no experience as to other countries.

388. With regard to the medical men of other countries, do you know whether any of them hold your views?—I have read a series of articles on the subject in the papers which have been published from time to time, and there are medical men on the continent who object to vaccination.

389. Does small-pox occur much more among the poor than among the better classes?—Where you

you have any infringement of the laws of nature as to sanitary matters, then you have more small-pox.

390. But, as a matter of fact, does it not occur much more among the neglected and poorer classes?—It is a curious fact that you always find small-pox as an endemic in badly ventilated and badly drained houses, such as the back slums and fever dens that you read of in London.

391. When it appears as epidemic, upon what classes of society does it fall?—Those living in a filthy and dirty state, and who do not pay attention to sanitary laws; living, for instance, five or six in a room that is not capable of supporting life for more than an hour or two.

392. Then would you consider that favourable sanitary conditions would do far more to remove small-pox than vaccination?—Decidedly, and the more you can carry out arrangements of that kind, the sooner you will diminish the present epidemic.

393. Does small-pox attack the young more than those who are less young?—It attacks the young, especially infants; and it is more fatal to them.

394. Does the liability to the disease diminish every year that you get older, whether you are vaccinated or unvaccinated?—No doubt; for instance, I could not successfully re-vaccinate many persons after puberty, but during an epidemic I could vaccinate them any number of times.

395. As a matter of fact, the figures show that you are less liable as you get older, whether you are vaccinated or not?—Yes.

396. How long did the system of inoculation prevail in this country?—For about 70 years.

397. Was it generally recommended by the profession?—It was highly approved of by the College of Physicians.

398. For how long?—Of course it met with a great deal of opposition at its first introduction; but after a series of experiments, many persons who took a very leading part at that time, would not believe that you could have small-pox a second time; everybody, in fact, thought so; and in the early part of my professional career, I had the opportunity of witnessing a great many cases of inoculation, and I have inoculated people myself also, before it was made a penal offence; but it was very generally adopted, because the profession believed that you could not have the small-pox a second time, and the public believed that you could not have the small-pox a second time.

399. It seems remarkable, that the medical profession generally adopted it; do you know on what basis of experience it was supposed to rest, and why the profession adopted it?—There is a great deal of fashion in medicine, and if you can get half-a-dozen fashionable men to recommend anything, it goes down; in the same way with medicines now-a-days; the hydrochlorate and hydrate of potassium, and those things, became fashionable; so with inoculation, many persons had an idea that it gave them more vigour and prevented any disfigurement, and consequently it was generally adopted.

400. Did you say that Dr. Jenner was in the habit of inoculating with grease from horses' heels?—In the original work, he tells you that the true vaccine could never be obtained, except through the greasy horse. He said, "Thus the disease makes its progress from the horse to the nipple of the cow, and from the cow to the human

subject." He goes on further, and he gives an instance, and a drawing also of a case.

401. Where do we get what is called the vaccine matter now?—I believe it is generally understood to be obtained from the inoculation suggested by Mr. Seely, by first giving the cow the small-pox. That is the general impression, but of course I cannot say positively how it is now obtained. That was the original source, and I believe that was abandoned, and they got what they call a fresh supply, by inoculating the cow with small-pox, and when you get the true Jennerian vesicle, as it is termed, this is the lymph which is made use of.

402. Are you aware that the practice of inoculating cows now takes place anywhere?—I tried the experiment with a view of getting what they call pure lymph from the cow.

403. Where do they get the small-pox?—They use the small-pox virus.

404. The human small-pox?—The human small-pox. It is supposed to mitigate the virulence of the complaint.

405. Is that an acknowledged fact?—Yes, I believe so. I have read up a good deal of these matters a few years ago.

406. Who is engaged in preparing this vaccine matter?—It is a Government affair. When I have been short of pure lymph (so called), I have always applied to the National Vaccine Institution for a fresh supply.

407. Do I understand you aright, that children are now vaccinated from the arms of other children, or direct from the cow?—I have abandoned the practice for the last 10 or 12 years; therefore I do not know what they are doing now.

408. I have been asked to put this question to you; did you give a certificate to the Rev. H. J. Allen, that his children were not in a fit state for vaccination?—Yes; his children were brought to me; they were covered with a nasty cutaneous eruption. The mother died in the last stage of consumption, and they were the very worst subjects for vaccination, and I thought it just possible that if I introduced any vaccine, they would, in all probability, be very considerably debilitated. This dissenting minister came from a long way, and wanted to know whether it would be convenient for me to see the children; I forget how many, but I think four or five. I never remembered to have seen such strumous-looking subjects.

409. You gave him this certificate not because you objected to vaccination, but because they were bad subjects?—Certainly; they were the very worst subjects for vaccination.

410. Being a duly qualified medical practitioner, did you expect that your certificate would be rejected?—Certainly not.

411. Was it accepted or rejected?—It was rejected.

412. By whom, and when?—I think by the Duke of Manchester; but I was not present when the examination took place.

413. And Mr. Allen was convicted of an offence for not having his children vaccinated, notwithstanding your certificate, was he not?—Yes.

414. For what reason?—I learned afterwards, that they objected to my certificate because I was opposed to vaccination generally.

415. Mr. Muntz.] You made some remark just now as to taking the vaccine matter from

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the grease of the heel of a horse; are we to understand from that, that there is no real vaccine matter in the cow?—The cow's teats became inoculated by the servants who were employed in handling the greasy-heeled horse. Dr. Jenner says, in his work, that when there was no grease there was no vaccine, and that his experiments were suddenly interrupted, and he was obliged to wait until the grease made its appearance again.

416. I think, if I remember correctly, Dr. Jenner's first observation in Gloucestershire was, that the milkmaids and people who attended the cows were not marked with small-pox like other people, and that first attracted his attention?—That first attracted his attention, but milkmaids and farriers are people who are physically stronger than the great bulk of the population, and their occupation gave them more tone, and they resisted the disease; but if he had carried out his experiments amongst those poor anæmic children of the back slums of London he would have arrived at a very different result.

417. You do not believe in real vaccine matter?—I have never seen it really protective; when I lived at the West End I was called upon, the year when the Queen was married, to re-vaccinate, and vaccinate something like 40 or 50 a day, because London at that time was very full, and everybody became intimidated in reference to the small-pox.

418. If it were proved that in some foreign countries the virus is systematically taken from the cow and used for vaccination, that would rather interfere with your theory, would it not?—No; Dr. Jenner says distinctly in his work that there is a spontaneous eruption somewhat resembling the true vaccine, but it is spurious and non-protective.

419. As to marks on the arms, I think in this country you only vaccinate on one arm?—Dr. Jenner said, that after being once thoroughly and efficiently vaccinated, we were for ever secure against small-pox, but then he only vaccinated one arm with one impression.

420. Do you consider that a mark on the arm can prove vaccination?—That is said to be the only test as to whether you have been vaccinated or not, and in course of time, in some constitutions, it becomes thoroughly obliterated.

421. Did you ever yourself know an instance where a child was properly vaccinated of the mark being obliterated?—In my public capacity as a vaccinator I vaccinated thousands, and I have seen them in after life, and I could find no trace whatever of what I had a right to expect, because they were certified as having been duly vaccinated.

422. You are aware that people are frequently vaccinated, and the vaccination does not take properly, and that on re-vaccination it does take directly?—It is a curious fact, that during an epidemic, you may always produce re-vaccination with very few exceptions, because it is in an atmosphere which favours its development.

423. Would it not be possible to get a similar mark by vaccination or inoculation with some other disease, such as the grease of the horse, or anything else?—That was the original source.

424. But supposing that there were any eruptive disease that might cause a sore place, would not that produce a mark?—I called your attention on my first examination to the fact, that I had seen a peculiar fluid exuding from the conical

masses in strumous subjects, and with their permission I inserted this secretion, and produced something resembling vaccination.

425. That would leave a mark, would it not?—Yes.

426. And the person having that mark might be presumed to be vaccinated?—Yes.

427. With regard to the sanitary condition of the country in your estimation, as a medical man, is the sanitary condition of the country better or worse than it was when you commenced as a practitioner?—Very much better; we have baths and wash-houses, and other sanitary measures which have been instituted, and which have been instrumental in keeping those epidemics in check. As I said before, you will always find small-pox as an endemic, where there is no proper sanitary regulation.

428. You say that Dr. Jenner thought that a person could not have small-pox twice?—That was the opinion of those who introduced inoculation. They believed that you could not have it a second time; Dr. Meade, I believe, was one of them.

429. It is admitted I believe, on all sides, that a person may have small-pox twice?—Yes, I have known patients have it a third time, and I know a young lady, to whom I was introduced the other day, who told me she had had it four times, and she is so constituted, that I believe she cannot help having it whenever an epidemic makes its appearance.

430. It is the same with measles, is it not?—Undoubtedly; and with all those exanthematous diseases.

431. There is no vaccination for measles, is there?—No.

432. How often is it that a person has measles, twice; according to your experience what would the proportion be?—You never get it the second time in the same virulent form as you do the first.

433. Is there one case in a thousand?—I should not like to venture an opinion on the number.

434. It is a very rare case, is it not?—It is a very difficult thing to define measles properly; in some subjects it assumes a very troublesome character, whereas, with others it is comparatively light, as with small-pox; some suffer from the malignant form, and others from the distinct form; you cannot say why one person should have it in the distinct form, but those who have the hæmorrhagic, or bleeding form of small-pox, are the first people to die; when the mucous surfaces slough they die in a horrible state.

435. With regard to measles and scarlet fever, is there a decrease in those diseases?—No; I believe that in many of the vaccinated this morbid matter is taken up, and eliminated from the body in another shape.

436. Then do you attribute the increase of scarlet fever and measles to vaccination?—I do, certainly.

437. Mr. Holt.] I understood you to tell the Committee that it was your opinion that certain diseases have been communicated by vaccination?—Yes; I called attention to one case in which that had occurred.

438. I understand that to be an opinion formed as the result of your professional experience?—I vaccinated a syphilitic child, and afterwards from the true vaccine vesicles on the eighth day I vaccinated two other children, and the result showed

showed that true syphilis can be conveyed in the vaccine lymph from the true Jennerian vesicle.

439. Can you point out to the Committee any statistics which would confirm that view, and prove that your experience is not singular?—If you refer to the Blue Book of Mr. Simon, I think you will find several cases recorded of your being able to convey syphilis through a true Jennerian vesicle. Mr. Ackerley, of Liverpool, writes thus: “I have no doubt syphilis has been communicated from a diseased to a healthy child by means of vaccination;” that is an extract from the Blue Book. Mr. Startin, a very eminent man as a physician, who has paid more than ordinary attention to skin diseases, says, “It is my opinion that the true Jennerian vesicle in a subject suffering from constitutional syphilis, or acquired syphilis, may be the means of transmitting this disease.” There are two or three others; I remember reading this first in a work by Mr. Lee, a well-known surgeon.

440. Have you any means of showing the Committee that since vaccination became more general, those particular diseases, syphilis, scrofula, eczema, and others, have increased to any extent?—There is no doubt about it.

441. Have you any statistics to confirm your own opinion on that point?—I only judge by the returns of the Registrar General; I see that scarlet fever has been raging, but the gentleman who will follow me, has given more than ordinary attention to the statistics, and will be able to give you that information. Dr. Whitehead also is of that opinion.

442. Sir *Smith Child.*] I think that you stated that the proportion of deaths of children in the large towns, was from 45 to 50 per cent.?—Yes; I have seen that published.

443. Do you attribute that in any degree to vaccination?—I do; I think there is no doubt about it; it is because vaccination is performed in what I call a very bungling way; and children are vaccinated who have really no business to be vaccinated, and it is those particular children who swell the bills of mortality.

444. Do you know what the per-centage of the deaths of children in country districts may be?—I do not know the statistics; I have no knowledge of that, but this has often been quoted; I think Sir James Simpson, who wrote a very pleasing pamphlet, said, that he believed that small-pox could never be exterminated by vaccination, and he made some allusion to the mortality.

445. Is it not the case, that vaccination is more general in the country than it is in the large towns?—I have been in practice in London for nearly 30 years, and therefore I have no experience as to the country, and I am unable to answer that question.

446. With reference to the answer which you gave to the honourable Member for North East Lancashire, you mentioned a case in which, in your own knowledge, syphilis had been communicated by means of vaccination?—Yes; and the case was submitted to two or three eminent men.

447. Had you ever more than one such case in your own knowledge?—I have seen other cases. For instance, I was once consulted by some young ladies who had been vaccinated (not by myself) from their brother who was suckled by a syphilitic nurse; they came to me to know whether I had ever seen anything of that kind after vaccination. I knew nothing of them, and I said that I had

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once seen a case, and only once, but I knew what I thought about the matter, and I suggested that Mr. Liston and Mr. Morton should see them at the time, and they both confirmed what my suspicion was, that it was true syphilis, and after a great deal of investigation, they found that the nurse had a constitutional taint; I took the trouble of finding this nurse, and I found, from what she told me, that her child died covered with a peculiar eruption, and that she had swellings in the groin, and so on; the usual syphilitic symptoms.

448. You only know one case in which you yourself vaccinated where this occurred?—No.

449. Dr. *Lyon Playfair.*] In what year did you discontinue being a public vaccinator?—I ceased to vaccinate about 10 or 12 years ago.

450. Did you then cease to be a public vaccinator?—I commenced practice as a public vaccinator in the year 1838, when I was an articled pupil to Mr. Fowke in Berkeley-square.

451. By public vaccinator we understand just now a vaccinator recognised by the Government; is that what you mean by a public vaccinator?—The gentleman to whom I allude was a public vaccinator, and by virtue of my position I performed the minor operations, so that I commenced the duties of a public vaccinator in 1838.

452. That is to say, that you were not a public vaccinator, but you acted as an assistant to a vaccinator?—I was articled to a medical gentleman, and we had two days a week for public vaccination.

453. When did you become a public vaccinator under the National Vaccine Institution?—I presume the honourable Member means to inquire when I got permission to obtain pecuniary pay for what I did at the parish expense; I was solicited when I left Berkeley-square by one of the directors of the poor, who knew me when living there, to become a public vaccinator. He knew what I had been doing, and he knew the experience that I had, and he said that it was a matter of pounds, shillings, and pence in the parish. I was applied to when I was a student at University College, and I received the appointment, and the books were sent to me in the regular way. That must have been in 1844 or 1845, or about that time. I received a note from the vestry clerk, or the people in power, to say that the books would be forwarded in the regular way, and that I was to do it at the parish expense.

454. Was that before you became a qualified practitioner?—About that time; it was in 1846 or 1845.

455. Were you a public vaccinator in the year 1856?—I continued to vaccinate as a public vaccinator up to within the last 10 or 12 years.

456. Then you were a public vaccinator beyond 1856, from which time the records are kept?—Of course, I continued the practice until within the last 10 years.

457. As a public vaccinator?—I performed the operation gratuitously on certain days.

458. You told us the literature of the subject, and stated that Dr. Jenner believed that the vaccine virus was originally got from the grease of a horse's heel; but are you not aware that Dr. Jenner found out that he was mistaken, and that he had confounded the grease with the natural equine pox, or the pox in the horse, just like the pox in the cow?—I am aware of that.

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459. And that he admitted that he had made a mistake?—He was constantly making mistakes.

460. But you did not tell us that Dr. Jenner knew perfectly well that he had made a mistake originally, and that what he thought came from the grease of a horse came from the equine pox?—Yes, he made that mistake undoubtedly.

461. Did you not state to one of my honourable friends just now that the chief supply of vaccine virus was from the cow inoculated with the small-pox?—I said that that was generally supposed to be the case, so I am told. It is generally inferred that that is how it is obtained through Mr. Seely's experiments.

462. Are you not aware that those experiments of Mr. Seely's were most important experiments, establishing that small-pox became mitigated when inoculated from the cow, but that that is not the source from which the National Vaccine Institution is supplied?—I do not know anything of the source of supply of the National Vaccine Institution; I said that that was believed to be the source of supply.

463. Then would you be surprised to hear that it is in no case the source of supply?—I should be very pleased, indeed.

464. I think it would not be difficult to establish; with regard to your examination in chief, you first stated, did you not, that you objected to vaccination because it often proved fatal?—Yes.

465. And you have given a very interesting and specific account in your little work upon the subject; at page 34 you give a very specific case, and you say this: "When the small-pox broke out at the camp at Shorncliffe in 1860 among the soldiers re-vaccination was at once had recourse to, but it played sad havoc with them; 13 died after the operation, and others had their arms amputated to save their lives;" I may assume that when a person of your position and qualifications made such a statement in a work, you would take ample means to prove the truth of it?—I wrote to two or three parties to know whether the report that appeared in three or four papers was really correct. I forget in what year it was, but soon after this occurred I was in the neighbourhood of Shorncliffe, and I inquired whether the small-pox was there, and they said yes, it was very bad, and that many men had suffered in the way which had been described.

466. You ascertained positively that the number of 13 died actually in consequence of re-vaccination?—That was what was asserted and appeared in the public prints.

467. Was that what you ascertained from your own researches?—I ascertained from inquiry that such had been the case.

468. Are you aware that there is a medical department of the army where the statistics of the army are kept with great accuracy, and did you inquire there?—I did not.

469. Should you be very much surprised to hear that there is not one recorded instance in the whole of the British army, of one person having died from vaccination or re-vaccination?—I should be very much astonished to hear that.

470. Do you not think that before such a precise and important statement was made by you, it would have been desirable for it to have been ascertained by you whether it was true?—I did not know of any means of ascertaining it; I took it for granted that what appeared in

the regular way as ordinary things appear was correct, and that no one would propagate a thing that was not true.

471. You did not go to the statistical department of the army and ascertain whether that was true?—I did not.

472. When you stated that vaccination largely swells the bills of mortality, what did you exactly mean by that expression?—I mean that by indiscriminate vaccination, you produce the diseases which I have enumerated.

473. Do you mean that since vaccination has been introduced the ratio of mortality has increased?—I do amongst children.

474. Are you aware that the analysis of the bills of mortality in London in the century before vaccination, shows a death-rate of 800 per 10,000 of the population?—I have paid no attention to statistics of that kind.

475. You do not know that fact?—I do not know that fact.

476. Do you know that in the half century previous to vaccination, the ratio of mortality per 10,000 of the population in London was 520?—I have seen those figures, but I am not acquainted with them.

477. Do you know that now the rates of mortality per 10,000 of the population in London, is nearly one-half of that, or 249?—I am not aware, as I said before, of anything with reference to those statistics.

478. Admitting that those statistics are true, does not that show that there has been no increase of mortality, but rather a very large decrease since vaccination was introduced, whether that was the cause or not?—I think that those questions had better be submitted to the gentlemen who have paid special attention to those particular questions.

479. Now we will take the case of the children. Are you aware that there is a very great variation in the mortality of children in the various districts in England; that in the unhealthy districts, 70 per 1,000 of the population die under five years of age, and that in the healthy districts only 37 per 1,000 die under five years of age?—Yes.

480. Are you not aware that vaccination is equally distributed in the healthy and in the unhealthy districts?—I am not aware of the fact.

481. Have you any reason to doubt it?—When I answered that, I believed that the mortality was 45 per cent., as quoted from the Register General in large towns; I asserted that I believed that the vaccine virus was instrumental in swelling the bills of mortality.

482. That is exactly what I want to find out. May it not be from other causes in those large towns, when you find that where there are not large towns there is no such great mortality amongst children?—I can quite well understand that children living in a healthy locality would not be under the same depressing influence, and in all probability the general mortality would be lighter than it would be in large towns.

483. Are you aware that there are excellent records of mortality in Sweden, where there is also very extensive vaccination?—I have often seen and read it.

484. You stated that you had no doubt that the mortality amongst children increased with vaccination?—Because I have seen disease called into

into activity by vaccination which I believe would otherwise have laid dormant.

485. Should you be very much surprised to hear that in Sweden, where vaccination is now thoroughly diffused, from 1775 the mortality amongst children under five years of age, per 1,000 living, was 90 in the 1,000, that from 1821 to 1840, it became reduced to 64 in the 1,000, and at the present time it is only 57 in the 1,000, and is not that a very large reduction of infantile mortality, from whatever cause?—As I said before, I have paid no attention to those statistics, but figures will prove anything.

486. We want to ascertain your data for the very large assertions that you have made?—As a public vaccinator I say again, that I have often seen diseases brought into activity amongst children who were vaccinated, which would otherwise have remained dormant.

487. Now with regard to the subject of inoculation, my honourable friend the Member for Manchester asked you why it was that inoculation had been practised by physicians in the last century, and I understood you to reply, that it was only on account of the fashion?—No, I beg your pardon; I said that it was fashionable to be inoculated, and it was generally adopted because it was recommended by the first physicians of the day.

488. Are you not aware that even now, if a person is inoculated, the small-pox is generally far less severe than taking it in the ordinary way?—I am quite aware of that.

489. Is not that the reason that the physicians, on account of the very mitigated form of the disease, originally inoculated for it?—But, unfortunately, when it was introduced at that time, those who were inoculated in that way spread the disease just as much as those who took it in the natural way, and it was found, that one in 40, I believe, died; and that it was instrumental also in keeping the disease constantly amongst us; that was why it was abandoned; and when it was abandoned, the small-pox ceased to become an epidemic for some time, and in the intermediate time, Dr. Jenner introduced vaccination.

490. I think you stated also in your examination in chief, that the main reason that small-pox is less prevalent now is, the fact of inoculation having been abandoned, and not the adoption of vaccination?—Not the main reason; that and the institution of sanitary measures; inoculation kept it constantly amongst us, and when they ceased to inoculate, the disease apparently left the country.

491. As to the effect of inoculation, probably you are very familiar with a celebrated work published in 1801, called "The Increase and Decrease of various Diseases," by Dr. Heberden?—I remember reading it some years ago.

492. The object of that was, to point out how dangerous inoculation amongst other things, was in extending disease; Dr. Heberden states, after careful examination, that the deaths from small-pox had increased from four to five by inoculation, and so far, that justified your belief; at that time, there were 3,000 deaths per million of the population; the effect of inoculation, according to this decrease of one-fifth, would have made the deaths 2,400, if that was the whole cause; are you not aware, that now the ratio of mortality is only 105, instead of 2,400?—I am not acquainted with those figures; as I said before, I

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have paid no attention to those statistics, but I am very pleased to hear it.

493. Now, I will go to the diseases which you think are especially brought on by vaccination, and have increased since; I think amongst others, you specially referred to scrofula as being largely increased by the introduction of vaccination?—I think so; there is no doubt about it; strumous diseases have been generally on the increase.

494. I think amongst others, you specially mentioned scrofula?—Yes.

495. Are you aware that it appears from the researches of Dr. Greenhow, that from 1681 to 1690, there were 801 cases of scrofula per 100,000 of the population; that from 1746 to 1755 (still before vaccination was introduced) there were 1,099 per 100,000 of the population, and that at the present time we have only one-fifth of that proportion, or 206 per 100,000 of the population?—As I said before I have never paid any attention to those statistics, but in my experience I have seen children, hitherto healthy, pine and assume a strumous character after vaccination.

496. But assuming that those statistics are true, do they not show, whether vaccination has anything to do with it or not, that there is a very large decrease in scrofulous diseases since the period of vaccination and not an increase?—Supposing what the honourable Member states to be true, that is so.

497. With regard to the question of syphilis; you correctly quoted three gentlemen who believe that syphilis could be introduced by the Jennerian vesicle; are you not aware that you quoted three from a list of 540 physicians, of whom all the rest do not believe it?—I think, if I remember rightly, that I took those that were published in Mr. Lec's book first.

498. But are you not aware that they are out of a list of 540 physicians?—I think that if that inquiry had been pushed a little farther, and medical men generally had been applied to, and not a particular class of men, the result might have been different.

499. Are you aware that in this Blue Book it appears that 540 physicians, from all parts of the world, had been asked those questions, and only three replied in the sense that you quoted, and that you have not quoted the opinions of all the others who answered in a different sense?—I should say that if the same questions have been submitted generally to the profession, both on the continent and in this country, you would have had a very different result.

500. Are you aware of that?—I am aware that those gentlemen were applied to.

501. Are you not also aware that the men who were applied to, both in England and in France, and in Germany and in Sweden, and in Norway, and in almost all parts of Europe, were the most eminent men of the profession?—No doubt about it.

502. And they all, with the exceptions that you named, replied in the negative; I understand that you call yourself (and properly) a general bedside practitioner?—Yes.

503. You are not a specialist; you have not devoted yourself to syphilis?—No.

504. Would you, for instance, consider your opinion upon the subject of syphilis as for one moment comparable to the enormous experience of Dr. Ricord of Paris?—Certainly not.

505. When you find not only Ricord, but Chaumel, Moreau, Maillard, Rostan, Volpeau,

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the most celebrated syphilitic doctors in the world, declaring that in no case have they known syphilis introduced by vaccination, would you not think that accordance of opinion rather remarkable?—No doubt; I will not dispute it. The results of my experience I have given you; it was an undoubted case of syphilis, because three of the most eminent men in the profession were living in the immediate neighbourhood, and testified to the fact.

506. I have not the slightest reason to doubt that it was syphilis, and that you believed it to be introduced in that way, but when men of such enormous experience as the doctors in Paris and Vienna, and especially Dr. Boeck of Christiana, who have made syphilis the business of their lives, have made repeated experiments to try whether they could produce syphilis by vaccination, and have not succeeded, is it not extraordinary?—Very.

507. Now, with regard to eczema, you consider that that had increased very largely since vaccination has been practised?—I told you that I had seen certain diseases follow vaccination, and amongst them eczema.

508. I think I can mention here that in your book, at all events, you referred to it as having increased?—No; I have seen cases of eczema follow vaccination.

509. You do not believe that eczema has largely increased since vaccination?—Eczema is a very common disease now.

510. Do you think that it is a common disease on account of vaccination?—I have seen it follow vaccination.

511. Would you give an instance in which you have seen eczema immediately follow vaccination?—The first case that came under my notice was that of a lady who had been vaccinated (not by myself), and this running scab was generally excited, and a scaly eruption followed; she had never previously, nor had any of the family, as far as I could trace, had this particular disease.

512. Is it not the fact that eczema very often comes about three or four months after birth?—Very commonly with children.

513. Is it not the fact that vaccination generally takes place at about three months after birth?—No doubt, in children; but this particular case, the first that came under my notice, was that of a lady over 30 years of age.

514. Is this a good description of the diseases of infants: "Among diseases of infants and young children scarce any attends more frequently than pustular or scabby eruptions in several parts of their bodies, as in the breech, but more especially their foreheads, brows, and other parts of the face, which we oftentimes find overrun with a dry crusty scab"?—It is a very good description.

515. Are you aware that that description was made by Dr. Turner in 1714, before vaccination was introduced at all?—Yes; I can well understand that, because it is a very common disease.

516. And it was common before vaccination?—Yes: and I have seen, as I said before, cases of eczema follow vaccination.

517. Mr. Hibbert.] You stated that vaccination induced in children who live in low localities a tendency to certain diseases; would you say that if you were to take a certain number of children, say 100 children, who had not been vaccinated, and 100 who had been vaccinated, in the same locality, the children who had not been

vaccinated would be less liable to those diseases than those who had been vaccinated?—Yes; that is the result of my experience. I think anything which debilitates and lowers the standard predisposes to disease.

518. Have you anything to say on that point beyond your own opinion?—I have seen those cases. I have seen children living in those districts who were afterwards inoculated with small-pox, and I found that those who had been previously operated upon in that way suffered more from the complaint than those who had not been vaccinated.

519. How do you account for the fact that fewer people and fewer children of those who have been vaccinated, die from small-pox, than those who have been unvaccinated?—I was not aware that it was the fact.

520. Do you not see the returns which are generally given, for instance, in the last few weeks of the deaths by small-pox showing that the proportion is very much greater amongst the unvaccinated than amongst the vaccinated?—I think I have answered that question by stating that of a large number who are returned as unvaccinated, many do not exhibit the usual protective marks, and therefore they are returned as unvaccinated. I have no doubt that infants die even before vaccination; and after vaccination they are subject to the disease, and they die.

521. You mean by your reply rather to imply that a number of those cases which are returned as unvaccinated, are cases where the persons have been vaccinated but do not show the marks?—Yes.

522. Is it not very probably the fact that those are cases of unsuccessful vaccination, and that therefore they have not the protection which they should have?—That is what I say, that if there is to be any protection, the operation should be thoroughly performed, and the full complement of marks established.

523. Then your argument would not go so far as that true and proper vaccination is no protection?—I say that if it possessed any protective power I would rigidly enforce it, and insist upon the full complement of scars being produced.

524. Do you remember the case of Mr. Allen, the case that was sent up to the Court of Queen's Bench?—Yes.

525. Did you in that case give a certificate that the children were unfit to be vaccinated?—I did.

526. Did you examine the children?—I did.

527. Upon what grounds did you give the certificate?—There were large glandular swellings, and eruptions about the head and face.

528. What were the ages of the children?—There were three or four children; I forget the ages.

529. Did you examine the children at the time you gave the certificate?—Certainly.

530. When you have been in the habit of giving certificates of this kind, have you always examined the children?—Certainly.

531. And they have not come to you to give certificates, knowing that you object to vaccination?—I have often been applied to for such certificates, and I have refused them; but I have said, "If the child is not in a fit state, I shall be very glad to make the requisite examination, and certify under the section of the Act."

532. You say that you ceased to be a public vaccinator 10 or 12 years ago?—Yes.

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533. Had you, up to that time, performed the vaccination at the public vaccination stations?—I continued a public vaccinator from 1838 up to within the last 10 or 12 years.

534. When did you cease to believe in the powers of vaccination?—It was gradual.

535. Was it before you gave up your office as public vaccinator?—Yes, long before; I refused for instance, to vaccinate about one-third of those who applied to me.

536. On what ground?—Because I did not think they were in a state of health to be operated upon, being delicate looking strumous children.

537. Did you continue to perform vaccination for any number of years after you had ceased to believe in its efficacy?—Yes, up to within the last 10 or 12 years, I vaccinated healthy children.

538. Sir *Dominic Corrigan*.] Can you recollect about what age you were when you graduated in 1846?—I was born in 1819.

539. You took out your license as a surgeon in 1846, 25 years ago?—Yes.

540. You were 20 years a public vaccinator, and you have retired from that practice for 12 years?—Yes.

541. So that for 12 years before you went in for practice, or had any license yourself, you were a public vaccinator?—I was an articled pupil in 1838.

542. Do we understand by a public vaccinator, a public officer?—My answer to that question is, that all students and articled pupils perform the minor operations of surgery, and amongst them is vaccination, and I performed the duties of a public vaccinator.

543. By a public vaccinator we understand a public officer, and according to your dates for 12 years before you obtained a license, or while you were a pupil, you were a public vaccinator, that is to say, holding a public appointment; was that so?—I performed the office of a public vaccinator from 1838; the gentleman that I was articled to had two days a week for vaccinating, and I performed not only the office of a vaccinator, but I bled and dispensed and performed all the minor operations.

544. But were you then a public vaccinator, that is to say, an officer under the employment of the public?—He was a public vaccinator, and it was performed under his supervision.

545. It does not follow that because he was a public vaccinator you were one; would you call a solicitor's apprentice a solicitor?—It is the usual practice of all who take pupils.

546. I am not talking of the practice but of the name; you say that you have realised a position as a bedside practitioner second to none; what is the difference between a bedside practitioner and any other practitioner?—I will explain it; I had a large midwifery practice to begin with, and a general practice of patients calling upon me; I did not lend myself to any particular scheme or become an expert in anything, like most men who step out of the regular practice as medical practitioners, but I was constantly employed at the bedside, and I realised, as I said before, a position second to none.

547. Is not every medical man a bedside practitioner?—Yes, but I had a very large bedside practice, but some only are professional experts.

548. On page 10 of your Examination, you say, if this be correctly printed, "Now, my friends, most of them, I am happy to say, are Conservatives, and those two ladies were Conservatives, and

they were very anxious, indeed, as good constitutionalists, in case of death, not to be returned amongst the unvaccinated." Would you be kind enough to explain to me whether it is the fact, that in London, the persons who are Conservatives, particularly ladies, think it a part of their politics not to be returned among the unvaccinated?—I made that allusion with reference to two ladies, who requested me to examine their arms, which is by no means an uncommon thing to do.

549. You say in answer to Question 164, that in your capacity (I suppose you mean in your capacity as a public vaccinator), you have had occasion to visit large schools and different asylums, and have taken the trouble to make yourself acquainted with this so-called protection; will you be kind enough to mention the names of the large schools and different asylums which you have had occasion to visit?—Yes; and I am sorry to say that the small-pox has made its appearance amongst the children to whom I have alluded, I mean the Hanwell Schools. In my capacity as a guardian, I visited the schools, Hanwell and Colney Hatch; the first are the Schools, and Colney Hatch is an asylum.

550. Then there are two schools that you visited?—Yes.

551. What was the extent to which you carried the examination of the children there, so as to satisfy yourself?—I examined in the presence of the medical officer, on my first visit to the schools, all the girls who belonged to the parish to which I belong, and many others; and I called his attention to the fact that there was a general deficiency in the necessary cicatrices, and that they were really not protected in the way in which we have been led to believe they ought to be.

552. Then you drew attention to the fact that vaccination had not been perfectly carried out with regard to those girls, and therefore they were not protected?—That was my impression, that they had not the full complement of scars.

553. Then, of course, if they had been properly vaccinated, your inference would have been that they would have been better protected?—I called his attention to it, because small-pox is now raging there amongst the children, and they have not the full complement of scars. I said, "As public men you ought to enforce the Act, and see that they are properly vaccinated," because those men who were employed did not carry out the law as it was originally intended, and therefore you very frequently found those children with not the full complement of scars.

554. Then you advise him to do that which you did not believe to be a protection at all?—I called his attention to the fact that they were not protected, and that in the event of the small-pox breaking out, that would be the result of the inquiry.

555. You have spoken (very properly I am sure) of your great experience; may I ask you if you are, or ever have been, attached to any large public institution as physician or surgeon?—I have not.

556. You spoke in answer to Question No. 167, of having a staff of nurses in your employment who were all perfectly impenetrable to the influence of any disease, for you say that none of those ever had it, or have ever suffered in any way; what was the number of the staff of nurses

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which you had?—I had four nurses who attended to certain cases, that is of small-pox and fever, and they were constantly employed; they had never been vaccinated, and had never had the small-pox. I had also six or eight midwifery nurses.

557. Had you constant employment for a staff of four nurses for small-pox and scarlatina?—Yes, I employed them constantly.

558. You stated at page 11 that vaccination often proved fatal; did you ever see a single case of vaccination killing, *per se*?—No, I have never seen it myself, but there have been such cases.

559. Do not answer the question unless you like, but what is the usual fee for vaccination?—I received from half-a-crown to a guinea.

560. Then you incurred a very heavy loss when you gave up 500 *l.* a year; you have stated at page 11 that you have re-vaccinated thousands, how many thousands have you re-vaccinated?—I should say that during my residence in Berkley-square, during the year the queen was married, for instance, I vaccinated and re-vaccinated on an average about 30 or 40 a day.

561. Do you adhere to the statement that you have re-vaccinated thousands?—I do certainly.

562. Can you tell me how many thousands you have re-vaccinated?—During the 20 years that I carried out the practice of vaccination, and especially during the epidemics, of course the numbers who wished to be vaccinated were very large.

563. Then it is only from loose recollection that you speak of that?—I beg your pardon.

564. Where are the numbers?—I did not bring them with me.

565. You have stated at page 11, and further on through your evidence, that you have seen eczema, struma, convulsions, enlargement of glands, delirium, abscess, pneumonia, erysipelas, and phagedenic ulcers, all follow vaccination; would you be kind enough to mention any disease which you have not seen follow it?—I must claim the protection of the chair; the human body is subject to very many diseases.

566. Is there any form of disease in respect of which you could say that it was conveyed directly by the vaccine virus, and that it was the direct effect of vaccination; as in the case of measles producing measles; scarlatina producing scarlatina; small-pox, small-pox; pyæmia, pyæmia; and so forth?—Those very diseases which I have enumerated, I have seen follow vaccination.

567. But those diseases come without vaccination, do they not?—Of course they do.

568. You mentioned on page 12, in answer to Question 192, that in the case of a lady, I think it is, dying of phthisis with granulations from the joints, you inoculated her with that matter?—I did.

569. For what purpose did you inoculate her?—To see whether I could produce anything resembling a Jennerian vesicle.

570. Was it at her request, or with her permission?—With her permission.

571. You have stated on page 13 that you studied medicine in Berkeley-square; is there a school of medicine there?—No; I think there must be some error in the report.

572. At page 13, in answer to Question 210, you have stated that the examination at Aberdeen is the most rigid examination, with the exception

of the University of London; on what grounds do you make that statement?—I have seen the different answers, and I have seen a list of the different subjects which are submitted for examination, and my impression is, that from the nature of the questions in the examination, it was not an easy one. The examiners were men of high position in the profession, and they were fully alive to the necessary matters, and were men specially engaged.

573. I do not think that you have answered my question; I asked you on what grounds you stated that the examination in the University of Aberdeen is the most rigid examination but one in the United Kingdom?—Because when I wrote to know what the subjects were, a list was sent to me to say what I should be prepared to be examined upon, and I have other papers from the different universities, and I have seen what the nature of the different examinations was; that is my impression.

574. Are you aware of the particulars of the examinations in either the Queen's University at Cambridge, or in the University of Dublin or of Edinburgh?—Not particularly; I have seen from time to time the questions published.

575. Your examination occupied a few hours, I think you stated?—I went in about one, and came out about five.

576. And that was the whole?—There was no limit to the time.

577. But there was only one examination?—There was only one examination.

578. Are you aware that in other universities there are several days of examination?—Yes, I am quite aware of that.

579. And do you still adhere to the statement that notwithstanding that, the examination at Aberdeen is more severe than any, except that of the University of London?—It is principally a *vivâ voce* examination, which I consider the most severe test. Many men can write upon diseases which they have never seen in the usual way.

580. You have stated in reply to a question from an honourable Member in explaining why you did not go into the University of London, that they would not admit you to matriculation in consequence of your not having the full complement of terms; will you explain how that was?—Because I did not register my lectures.

581. Do you forget that there are no terms whatever required in going in for the matriculation examination at the University of London?—When I applied to the University of London, I was given to understand that I must register my lectures and the terms that I had kept, and I had not registered them, and therefore, I was not eligible without having the certificates in the regular way.

582. My question is this: your statement is that they would not admit you to the matriculation examination unless you had kept your full complement of terms; I ask you whether you are aware that at no time whatever did the University of London require any terms to have been kept by a candidate presenting himself for matriculation?—I think there must be some mistake with regard to the word "matriculation."

583. But are you aware that no such thing as a complement of terms is required for the matriculation in the University of London?—The question put to me was, why I did not go to the University of London? My reply was, from what

what I remember, that I had not registered the full complement of terms; that is to say, that I had not registered my lectures.

584. You have referred to the opinion of Dr. Startin, in which he says, that vaccine may be the means of conveying disease; is that an expression of opinion, or is it the knowledge of a fact, and does he state that it has conveyed it?—I think he states that he believes that the true Jennerian vesicle in a subject suffering from constitutionally acquired syphilis may be the means of transmitting this disease.

585. He is of opinion that it may be, but has he stated that it ever has done so?—I only quote what he states himself.

586. You have given a statement as to the direful effects of vaccination as occurring at the camp of Shorncliffe; you have not given that on your own authority, but as an extract; have you given a reference to the authority from which you got it?—I think not.

587. Is it usual for men of eminence or care to give statements of that kind without giving the authority?—It is a generally acknowledged fact, and I think you will have evidence brought before you to prove that such has been the case.

588. Is it usual in a published work by men of eminence to give a statement of a fact, on the authority of another, without giving a reference to the authority, or is it justifiable?—I decline to answer that question.

589. Mr. W. H. Smith.] You have prepared yourself for examination on this question of small-pox; I apprehend that you were aware that you were about to be examined here?—Yes; I wrote to say so.

590. Have you inquired into the operation of the small-pox hospital at Hampstead, which has been opened during the last three months for the pauper patients of London?—I have seen the report.

591. Have you been there yourself?—I have not.

592. Are you aware that none of the nurses or attendants have been attacked by small-pox?—I am not aware of it, because I have not visited the place.

593. But you have no reason to doubt the official statements which have been made to that effect?—None.

594. You say that re-vaccination deteriorates the system and weakens the powers of vitality?—I do.

595. Then, I presume, that those nurses having been vaccinated are more liable to the disease than persons who have not been vaccinated?—It does not act upon every one in the same way; if you take a selection of strong healthy people they shake it off.

596. In your evidence you have stated that in at least one-third of the cases, injury has resulted from vaccination?—I have.

597. Therefore, in one-third of the cases of persons taken promiscuously as nurses in the hospital, I presume injury has resulted?—There is a very careful selection made of them.

598. Are you prepared to assert that there is a very careful selection of healthy persons; are you not aware that there is great difficulty in obtaining nurses for small-pox hospitals?—Very great.

599. Then is there the power of obtaining very healthy persons?—Not just now.

600. Then they should be more liable to small-

pox, because they have been recently vaccinated?—I did not say that.

601. But your evidence says so?—My evidence was, that by vaccination you deteriorate and weaken the powers of vitality.

602. And being placed in a vitiated atmosphere of small-pox, they would, therefore, be more liable to the effects of small-pox than they would otherwise have been?—I do not say that.

603. Are you aware that in the official reports the percentage of deaths, in vaccinated cases, is stated to have been only seven per cent. in the hospital at Hampstead, out of a number of 800 patients admitted within the last three months, and that the unvaccinated patients have died in the proportion of 43 per cent.?—Yes, I believe that is quite correct.

604. Are you aware also, that the medical officer reports, that where the small-pox has been fatal in vaccinated cases, there has been some previous visitation of the system, and that in the majority of cases the visitation is caused by gin-drinking to excess?—I have no reason to doubt it.

605. *Chairman.*] At Question 193, I asked you this: "I suppose we are to understand that you consider vaccination not only useless, but an evil; are we to understand that you believe that it has been instrumental in increasing infant mortality?" To that, your answer is, "No doubt about it; especially when we take into consideration that the infant mortality, since vaccination in large towns, is as much as from 45 to 50 per cent. before they attain their fifth year;" what do you mean by "from 45 to 50 per cent"?—That amongst the children up to the age of five, from 45 to 50 per cent. are reported as having died.

606. Where did you obtain that fact?—It is a well known fact, and one that has been often quoted; I think that Sir James Simpson quotes it, but I am unable now to give it you; it was selected, I believe, from the Registrar General's Report, but I will not be certain.

607. I have the Registrar General's Report before me, and I find that the average annual rate of mortality from different causes during the 10 years from 1851 to 1860, in the case of infants under five years of age, is in the best districts, instead of 45 per cent., three and one-third per cent., in England and Wales generally six and three-quarters per cent., in the metropolis seven and four-fifths per cent., and in Liverpool, which is much the highest of any, thirteen and one-fifth per cent.; were you aware that that was the result of the inquiries of the Registrar General for the 10 years from 1851 to 1860?—I was not aware of that certainly.

608. Then what made you say, as you have said in the course of your evidence, that you obtained this statement of from 45 to 50 per cent. from the returns of the Registrar General?—It has been published over and over again.

609. But where?—Through the usual mediums.

610. Can you give us the publication?—I have not it by me, but I can do so.

611. Do you not imagine that you must be under a mistake when you find that what I have read is the return of the Registrar General?—Yes, that is the return (and, of course, I have no reason to doubt it), but what I have always been led to believe, and what I have always seen reported from time to time, is that there is a mortality

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talities of from 45 per cent. to 50 per cent. in infants in large towns.

612. I understand you to mean that you have reason to suppose that in large towns, since vaccination, 45 to 50 per cent. of the children have died before they attained their fifth year?—Yes.

613. Are you aware that such a statement made by a man of a position of some years' standing would have a strong effect in increasing the dislike to vaccination?—I can well understand that.

614. Will you tell me by what means you, as you thought, ascertained such a very striking effect before you asserted it?—I believe you will find that it has appeared from time to time, and that it is a recognised fact.

615. But I inform you on the contrary that the recognised statement of the Registrar General is, that in no place does it exceed 13½th per cent. I simply want to know upon what grounds you have made the statement that the mortality of infants in large towns is from 45 to 50 per cent. before they attain their fifth year. It is possible that you may mean something different from what I supposed you to mean in the answer to the question, and if so, we had better have it set right. It is a most important statement, and if it be true that this mortality was caused by vaccination, would entirely justify the opinions against vaccination. Will you inform us what you mean by that statement?—What I mean is, what I say, that I believe, upon reference to the necessary documents, you will find that it has been reported over and over again, that the total deaths in large towns average from 45 to 50 per cent. among children before they attain their fifth year.

616. That is to say, of 100 children, 45 to 50 die before they attain their fifth year?—Yes.

617. I ask you, how you reconcile that with the statement of the Registrar General, that in no case is the per-centage more than 13½th?—I have seen it stated over and over and over again, and it is my belief that such is the case.

618. Do you mean this; that of those children who die, 45 per cent. are under five years of age?—Children before they attain the fifth year.

619. Do you mean to say that of the whole number that die, that is the proportion?—No, of children before they attain their fifth year.

620. *Dr. Lyon Playfair.*] You mean in that, that if there are 500 children born to-day in Manchester, before the end of five years 250 of them will be dead?—Quite so.

621. *Mr. Candlish.*] Inasmuch as I seem to confirm the statement at Question 311, let me say that that was not the way in which I understood you; I understood you that from 45 or 50 per cent. of the deaths which occurred within a given period were of children under five years of age; that is so in my borough before they attain the age of five years; it is true that in large towns 45 per cent. of the deaths occurring are among children under five years of age, is that what you mean?—Quite so.

622. *Chairman.*] I still am completely in the dark as to what you mean by that answer?—I quote from some authority, but I cannot give you the authority now, that the mortality up to a certain age is 45 per cent. amongst the infant population.

623. But you had notice of coming up to give your evidence here?—Yes.

624. Are you aware that the subject is a very important one?—Yes.

625. And also that your statement is a very important statement; may I ask you why you did not bring with you the grounds upon which you made the statements, so that when you were asked why you made a particular statement you might be able to inform us precisely upon what grounds you made it?—I believe that it is a recognised fact, and you will find that by future witnesses it will be cleared up.

626. Where did you obtain the fact?—I am not in a position to give it to you now.

627. You appear not to be in a position to say upon what grounds you made that statement; you will remember that one of the questions which you suggested to me, that I should ask you was, how you accounted for the statement that the nurses at the Small-pox Hospital did not catch the small-pox, having been vaccinated; and in reply, your first statement was, that the nurses at the Small-pox Hospital, had the small-pox before they were appointed?—I have seen that in print, and I have been told so.

628. Am I to understand from that, that it is your opinion with regard to this question of small-pox, taking the part that you have done (no doubt from an opinion) in encouraging persons not to be vaccinated, that it is a sufficient ground for your making a statement of this kind, that you have seen it in print?—I think I am perfectly justified in giving all the evidence I have given with regard to these different matters.

629. Then this statement which you made, "From what I can learn, the nurses at the Small-pox Hospital had the small-pox before they were appointed," is simply based upon your having read it in print, is it?—I think I was informed so.

630. I think I understood you before to say, that you were informed by one gentleman, that it was so?—Yes; and I have seen it in print.

631. Where did you see it in print?—In one of the journals lately.

632. Can you remember in what journal you saw it?—I cannot.

633. Was it a journal edited by, or connected at all with the gentleman from whom you heard the statement?—Certainly not.

634. On whose authority was it made in the journal?—I do not know at all.

635. Do you really think that such a statement as that, that the nurses at the Small-pox Hospital had the small-pox before they were appointed, that statement being made in a book upon the authority of a person you know not whom, is a statement to be put before this Committee as evidence?—I have only referred to what I believed to be the case, from what I have seen reported.

636. And you believed it, because you read it in a book, and not knowing from whom it came?—I have seen it asserted in the public prints, that the nurses of the Small-pox Hospital have had the small-pox before their appointment.

637. And you consider that you were justified making that statement, because you read it in a book, not knowing upon whose authority it was put in that book?—I simply stated what I saw.

638. You also state that you have had a good deal of experience of nurses, and know their physical

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physical capabilities as well as any one, and you say, "At one time I had a staff that I was in the habit of employing, who were so constituted in mind and body as to resist any infection." I understood you to state to day when asked of what number your staff consisted, that there were four nurses; am I to understand that those four nurses were "so constituted in mind and body as to resist any infection?"—They never had it from the time they were in my employ.

639. Will you be kind enough to give us some information about those nurses; how long ago is it since you employed them?—They were employed from the commencement of my practice in obstetric medicine on my own account.

640. That was, I think, in 1846?—Yes.

641. Did you begin practice with a staff of four nurses?—No; I did not.

642. Those four nurses having been "so constituted in mind and body as to resist infection," it becomes interesting to know a little about their history. When did you first employ one of them?—In 1846, and I continued the employment for something like 10 or 15 years.

643. How long did you employ any one of them?—They were constantly employed because I was in a large practice, and their services were frequently required.

644. Can you remember the number of years that you employed any one of them?—During the time that I was a general practitioner.

645. Is any one of those nurses living now?—I dare say there is.

646. Do you know where they are?—I do not; I have lost sight of some of them.

647. Can you give the name and address of one of those nurses?—Mrs. Smith, of 21 Arlington-street, was one of them.

648. And another?—Mrs. Upton, she lives in Kentish Town, and one at Agar Town, and the other one lived in Grove-street.

649. You are prepared to say with regard to the two whose names you have mentioned, that they were in constant attendance upon patients suffering from small-pox and fever, and that they had never been vaccinated?—They had never been vaccinated.

650. I think I understood you to say in reply to the honourable Member for Manchester, that you considered scarlet fever and measles to be the result of vaccination?—I think there is no doubt about it; we have had more scarlet fever and measles since vaccination has been in force.

651. Am I to understand from that, that vaccination gives persons scarlet fever and measles?—No, certainly not; but I have reason to believe that it has been instrumental in developing those diseases, changing the type and character of the disease.

652. In what way has vaccination developed scarlet fever?—The poison becomes absorbed and the system disturbed, and you get then those periodical attacks.

653. As a medical man, do you give it as your opinion that the special disease of scarlet fever is caused by the introduction of the vaccine matter into the body of a person?—Yes, that is my opinion.

654. Do you also give that as your opinion with regard to measles?—I did not say that with regard to measles; but scarlet fever has been frightfully on the increase since the introduction of the vaccination laws.

655. You state distinctly that scarlet fever has

been caused by the introduction of vaccine matter into the body of a person?—Yes.

656. In your answer to Question 190 (which again was a question which I asked, because you requested me to ask it), "Have you any statement which you wish to make with regard to the origin of the vaccine, or the condition of the lymph?" you say, "The original source of the true vaccine of Jenner is the production of a diseased animal, the greasy heel of a consumptive horse." Am I to understand from that, that you wish to give the Committee the impression that the theory of vaccination as developed by Jenner proved that the vaccine matter came from the greasy heel of a consumptive horse?—Yes.

657. But I think I understood you to say to-day, in reply to questions, that you were aware that that was a statement of Jenner's which he afterwards ceased to make?—Yes; but that was the first theory that was promulgated.

658. I understood you to-day to state, that although Jenner held that opinion while he was developing his theory, he ceased to hold that opinion before his death?—No doubt.

659. Then do you not think that it is an unfair statement to give the greasy heel of a consumptive horse as the original source of the vaccine of Jenner, when you are yourself aware that he gave up that theory before his death?—I think that he gave up pretty nearly all the original theories; I do not think it is at all an unfair statement, it is a statement of facts, because his experiments afterwards were not at all satisfactory.

660. Are you not aware that one of the reasons why vaccination is opposed in the country, and there is an opinion against it, is that it is supposed to have to do with the greasy heel of a consumptive horse?—I believe that is the general impression.

661. You have yourself thought it right to give that opinion, have you not?—That is my opinion.

662. Have you not also thought it right to state that Jenner himself gave up that theory before his death?—I could not say but what the analogy was the same; he inoculated from the greasy heel, and then he found by a series of further experiments that what he had first promulgated was not satisfactory, and then he said it was a spontaneous disease; he contradicted himself over and over again; in fact, I believe his original statement was no more to be depended upon than his last.

663. Then you think that the fact of his having contradicted himself, or, as it appears from experiments, changed his opinion, justifies your giving the impression that the vaccine lymph has anything to do with the greasy heel of a consumptive horse?—Yes, I do.

664. I believe you stated also that you understood that the vaccine lymph was obtained by inoculating a cow with small-pox; I did not quite understand how you came to have that opinion?—I told you that it was the general impression amongst the profession that it was obtained through that means.

665. When you say that it was the general impression amongst the profession, will you give me the reasons upon which you make that statement?—Because I am frequently in contact with most of my professional brethren, and the question is always before us as to what is the origin of the vaccine now in common use; I believe that

Mr. that the general professional opinion is that it is
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666. Can you mention any medical man of eminence who has given you that opinion?—I cannot mention names, especially now, but it has been a general subject of conversation.

667. Of course when you say that it is the general opinion of the profession, you must have in your mind some medical man who is known generally; can you give us one?—I do not know that I can give you one at this moment.

668. Again I must ask you whether you were not aware, a day or two before you gave this evidence, that you would have to do so, and whether you are not also aware that it is customary in giving evidence, when statements are made as to the opinions of others, to say who those others are who give those opinions?—Yes.

669. Mr. *Candlish.*] I think you have stated to day, that if vaccination were a protection against small-pox you would enforce its application?—I would if it were proved to be a protection.

670. Have you to-day in any way changed your opinion as to its having a protection?—Not at all; I think the best answer is the present epidemic; I do not believe in it.

671. Dr. *Brewer.*] You believe that the Small-pox Hospital nurses are protected by having had the small-pox previously?—I think there is no doubt about it.

672. Do you believe that having had small-pox previously, is a greater protection than vaccination itself?—I do.

673. Are you aware that all the statements which have hitherto come before us give the contrary impression?—I am not aware of that.

674. Are you aware that one in 10 I think of those who have had small-pox have small-pox again, and that under vaccination the number is not as large as that?—I am not aware of that.

675. Mr. *Taylor.*] You are of opinion, are you not, that syphilis is communicable by the Jennerian vesicle?—Yes.

676. And yet in your experience, as I understand, only one case has arisen?—Only one case.

677. You have had a very large experience, I believe?—Yes.

678. In regard to syphilis you are of opinion also, that it may lie hidden in the constitution for an indefinite time, and even occasionally pass over a generation?—Yes.

679. If then in any case a child suddenly develops symptoms of syphilis not having been vaccinated, you would take it for granted that it was lying in the constitution, and happened to come out at that time?—Yes.

680. It does not follow, therefore, that in the case of the child, although it was vaccinated from a syphilitic constitution, the syphilis is introduced into the child in that manner?—Not necessarily.

681. You expressed an opinion of great respect for the authorities whom the honourable Member for the University of Edinburgh named, who have tried many experiments in regard to the possible introduction of syphilis, and in all cases have failed to effect it?—Yes.

682. You expressed your idea that it was strange?—Yes.

683. Would you not therefore now feel disposed to harmonise your theory with that of those very eminent men by supposing that in the only case in which you have known syphilis to be introduced, it had come out as a constitutional symptom, and not as the result of the vaccination?—In these particular cases to which I allude, there was no particular trace of constitutional taint on the side of the parents; they were perfectly well before, and there was nothing to indicate disease, and when those syphilitic symptoms developed themselves, an inquiry was made into the parents' constitution, and it appeared to have been conveyed to those children through this vaccine matter.

684. Still there would be nothing astonishing in the appearance of syphilis in a child who had not been vaccinated?—Certainly not.

685. Mr. *Cave.*] You have stated that it might skip over a generation; might not that case which you have mentioned have occurred through syphilis being in the grand-parents, according to your theory?—It is possible.

686. *Chairman.*] I find it stated in this blue book, in the report of the Rev. J. Clay, one of the sanitary officers of Preston, that out of 100 persons born, 45 died before they attained their fifth year; do you not think that that is probably the statement that you wished to make?—Yes.

Mr. CHARLES THOMAS PEARCE, M.D., called in; and Examined.

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687. *Chairman.*] ARE you a Medical Practitioner?—Yes.

688. Are you a Surgeon or a Physician?—I do not know where I am now. I have been a member of the College of Surgeons for 20 years, but since the Legislature passes enactments which are retrospective in their operation, under the Bill of 1858, I presume that I am disqualified.

689. But at what date were you entered as a member of the College of Surgeons?—In 1851.

690. Have you practised as a surgeon since that time?—I have.

691. And also as a physician?—I practise as a general practitioner.

692. Where do you practise?—In Maddox-street, London.

693. Has your practice been in London during that time?—For 11 years; I was in Northampton from 1850 to 1861.

694. Have you any opinion which you wish to give with regard to the general theory of vaccination?—I have taken pains, believing it to be the desire of this Committee to elicit reliable information upon this question, to collect evidence which I have endeavoured to place under six propositions in the letter which I think the Right Honourable Chairman has in his hand, and I am the more anxious to do this after the expression of opinion in the debate in the House of Commons, as reported in the "Times" of February the 14th, in which allusions were made to those who oppose vaccination doing so from interested motives. I confess that I was surprised to hear that statement made in the House of Commons, when I, who have been the leader (I may not disclaim it), have spent nearly 400 *l.* in disseminating what I believe to be reliable information on this subject; being suspected of having interested motives, and that being charged against

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against me in the House of Commons, I feel strongly that it is my duty to lay before this Committee evidence which cannot be controverted in support of the six propositions which I have placed in this paper. The opinion which I have of Dr. Jenner's theory I have stated in these words: "Dr. Jenner's theory is unsound, having no foundation in physiology, nor any philosophical basis to support it." The theory put forth by Dr. Jenner in his work published in 1798, a third edition of which was published in 1801, when examined, may be said to be utterly devoid of any foundation. There is no instance known to the profession in which the inoculation of one disease prevents another. Dr. Jenner describes moreover two distinct diseases, the one cow-pox, which he said was not protective, the second the horse-pox, or equine-pox, which passing through the cow by inoculation was protective. The first disease, cow-pox, prevailed among the cows in the dairies of Gloucestershire, after being shut up in dirty dairies for the winter on winter food, and thence turned out in the spring into the open air. Cow-pox, as Dr. Jenner intimates, was generated in dirty byres; grease in the horse was generated in dirty stables; diseases like small-pox in one respect, namely, that they were the natural results of over-crowding and filthy habitations, with improper food; like small-pox in Westminster lately, in Haggerston, in Shoreditch, in Strasburg, under siege, when the people were huddled together in cellars underground; in Belfort recently under similar circumstances. In Paris small-pox broke out, not in the Haussmannized portions of the city, to use the language of the "Times" correspondent, but across the Seine, among the dirty, low, ill-fed, unwashed population.

695. Are we to understand that every one of the statements which you make, you make as having ascertained by your own examination the truth of them?—Yes, I vouch for this. I put nothing before the Committee which I cannot substantiate, and I will do it in as condensed language as I can. Dr. Jenner's description of protective matter was, that it was a phagedenic ulceration, having no analogy nor bearing any resemblance to small-pox in the human subject. Besides, if it be true that vaccination prevents small-pox, I ask what form of small-pox? Will any physiologist (there are some gentlemen present who are so) or physician of experience tell me that vaccine is like that form of small-pox which may be called pustular-typhus, described by Mr. Marson in Russell Reynolds' System of Medicine? Is there any resemblance whatever to another form of small-pox described by Mr. Marson, Surgeon to the Small-pox Hospital, in which, out of 104 cases, 74 of whom were vaccinated and 29 unvaccinated, no less than 44 per cent. died? Then to what form of small-pox does vaccination hold a relation? To that referred to by Mr. Marson as having been described by Van Swieten and others, called *variola benigna*; and it is possible that this form of small-pox, which, be it remembered, prevailed in Gloucestershire in Jenner's time, and was mentioned by him in his work, was the form which resembled the cow-pox of that day, and had some pathological relation thereto; but have we a similar relation existing now? What relation is there between the present epidemic of small-pox and the disease of the cow? I think I may be allowed to put before the Committee the foundation or

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basis on which this theory of preventing small-pox is founded. If the Committee do not desire to be acquainted with the merits of the whole question, then we shall be reverting to the compulsory law of 1867, and again commend that law through the powers of magistrates, boards of guardians, and public vaccinators, to an unwelcome population. Have you cow-pox? Can you find it? Who has seen it? You have pleuro-pneumonia in the cow, you have foot and mouth disease, you have rinderpest, a species of typhus; you dare not inoculate from the cow in its present state; it would be dangerous. The cow-pox, which was prevalent in Dr. Jenner's time, does not appear to have existed long. In his book, at pages 56 and 57, we find his description of it. Dr. Jenner says, at page 56 of the edition of 1801, "At what period the cow-pox was first noticed here is not upon record. Our oldest farmers were not unacquainted with it in their earliest days, when it appeared among their farms without any deviation from the phenomena which it now exhibits. Its connection with the small-pox seems to have been unknown to them. Probably the general introduction of inoculation first occasioned the discovery. Its rise in this country may not have been of very remote date, as the practice of milking cows might formerly have been in the hands of women only, which I believe is the case now in some other dairy countries, and consequently that the cows might not in former times have been exposed to the contagious matter brought by the men servants from the heels of horses." That is not the exact passage which I intended to read, but Dr. Jenner speaks of a very mild form of small-pox which existed in his day; and it was so mild, he said, that he had seen hundreds of cases without a death, and the people took no more notice of it than of any ordinary ailments. Is there not a law to govern the diseases of the brute creation as well as those of men? We have had plague, gaol fever, leprosy, elephantiasis, the sweating sickness, the black death; diseases like small-pox of past centuries have passed away with advancing civilization, and has not the cow-pox of Jenner? There are plague spots still; in Westminster and Whitechapel and Bethnal Green; and this epidemic which is passing over England is now seeking out, and, alas, finding favourable spots where it may meet with a welcome reception. One more word with regard to Dr. Jenner. At page 49 he says, "It is difficult to imagine that the measles and scarlet fever, and the ulcerous sore throat, with a spotted skin, have all sprung from the same source. The same question will apply respecting the origin of many other contagious diseases which bear a strong analogy to each other." Dr. Jenner's notion was that cow-pox, swine-pox, horse-pox, and human small-pox were identical diseases, and upon this mere idea he founded his practice. Another great mistake of Dr. Jenner's was his conclusion that non-susceptibility in the vaccinated to re-vaccination was a test of security, and a proof against infection. This, I would observe, was a blunder. There is no proof whatever that inoculating the lymphatic system with the virus of a disease artificially, that disease not being infectious, will secure a person against a disease of another kind which is infectious. On the contrary, there is a large amount of probability that this artificial inoculation predisposes the patient to an attack of small-pox; hence it is that we have the great majority of cases of small-

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pox during this present epidemic vaccinated. According to the report of Dr. Whitmore, published on the 1st of February; in the month of January there was a total of 110 persons in the parish of Marylebone who had been attacked by small-pox since the commencement of the present year. Of those a proportion of about eight per cent. were unprotected by vaccination; I hold, then, that those whom you call protected are more liable to infection during the epidemic than those who are called unprotected. It is most unwise, therefore, to recommend re-vaccination during an epidemic of small-pox. To ascertain from my evidence to-day whether I was right in my suspicion, that during an epidemic of small-pox there was a larger number of the vaccinated attacked than of the unvaccinated, I yesterday called on Dr. Marson at Highgate Hospital (unfortunately I did not see him for it was his vaccinating day in Southwark), to ascertain whether there was any increase of the proportion of the patients now in the hospital between the vaccinated and the unvaccinated. After the statements which have been made in this Committee-room, that the nurses in that hospital are secure against small-pox by re-vaccination, I confess that I was not a little astonished when the door was opened to me yesterday by a nurse who was scarified all over by small-pox. I asked the nurse how many patients there were in the hospital; she said 104. I asked her, "Are there many vaccinated?" she said, "Nearly all, sir, now; and many of them twice over." I said, "How many nurses are there?" and she said "Twelve." I asked "How many night nurses are there?" and she said "Only two; it is hard work, sir." I said, "How many of the nurses have had small-pox?" and she said, "I do not know, sir." I was sorry I could not see Mr. Marson, but this is an important point: I go yesterday from the Highgate Hospital (through my friend Dr. Brewer's introduction), to the Asylum Board's Office in Northumberland-street, Strand, and I there have an interview with the assistant clerk, Mr. Rutherglen, and he gives me the most astounding information, that at Stockwell, a nurse recently engaged, who was selected because she was pitted with the small-pox, was re-vaccinated by Dr. McCann, and is now in bed with confluent small-pox! I put this evidence before the Committee not on mere hearsay, but on authority which I think will not be disputed; and yet all this fuss is made by the College of Physicians, and the argument is raised upon such a fallacious basis as that, because 12 women, be it remarked, at a time of life when there is the least natural disposition to take small-pox, in a hospital situated upon the top of a healthy hill in the neighbourhood of London, in the healthy district of Highgate, in wards the cubic capacity of which is attended to, are not affected with small-pox, they are put in comparison with the denizens of Westminster and Bethnal Green, which are hot-beds of disease, and where fever multiplies and grows. I am surprised at the College of Physicians founding an opinion and making an assertion upon such a shallow foundation; The Imperial Academy of Medicine of Paris has published a report presented to his Excellency the Minister for Agriculture, Commerce, and Public Works, respecting the vaccinations performed in France during the year 1867. I turn to the seventh page of that report, and I read this: "Dr. Ducharme, 1st class Aide Major of the 1st Regiment

of Voltigeurs of the Guard, engaged with great zeal and success in re-vaccination. A portion of his report is here transcribed. 'After the medical inspection in 1867 of the 1st Regiment by Baron Larrey, it was decided to practise re-vaccination in the regiment, and the operation was confided to me. On the 20th July 1867, I attended at the Academy with nine of the 180 young men recently placed on the roll of the regiment; I chose youths of rosy complexion, sound temperament, and free from acquired or hereditary disease. I completed a first series of operations on the 31st December 1867. The number re-vaccinated amounted then to 437, when, towards the end of 1868, a small-pox epidemic, in a highly confluent form, broke out in the regiment. This epidemic, though not widespread, made, nevertheless, many victims; among others, one of the infirmity assistants, who died in the hospital of Gros Caillou.' To what should we attribute this epidemic in a regiment, in which 437 re-vaccinations had been performed, where the hygienic conditions, as space, ventilation, and food were excellent, when in the 2nd Regiment of Voltigeurs, lodged in a precisely similar barrack, situated in the same court, but on whom no vaccination had yet been made, not a single case of small-pox existed." I submit that that is evidence that re-vaccination predisposes the patient to small-pox. If we look at the authorities contemporaneous with Jenner, we shall find the majority of the most eminent men of that day condemning his practice, and not the least among them was the celebrated John Hunter. John Hunter (who was acquainted with Jenner) in his Dissertation on the Blood, wrote as follows: I have quoted him in my Essay on Vaccination, which I have before me. John Hunter, the greatest physiologist and anatomist, I suppose, that this country ever produced, says: "The blood has been supposed to be a passive, inanimate body, deriving its motion from the action of the heart. Some, in considering this fluid, have only attended to its changes out of the circulation; others, to its chemical analysis; and others to its appearance under the microscope; but its chemical analysis and form, explain nothing. Blood is not simply animal matter, but possesses that arrangement on which the living principle depends. Whatever is taken into the system for supply, must undergo these changes, viz., animalisation and vivification. The blood, I conceive to be alive, as it carries life to every part of the body. Any extraneous substance introduced into the blood modifies the vitalized or living fluid. The introduction by inoculation of mineral poisons, or vegetable poisons, is hazardous, and in certain quantities may be destructive, but the introduction of animal products from another living body, be it a man, a cow, or even the ass, is infinitely more pernicious, because allied to it in being vitalized." In that language did John Hunter, the greatest physiologist and anatomist of that day, condemn the practice of inoculation with equine or vaccine matter. Mr. Birch, who was then surgeon to St. Thomas's Hospital, and surgeon to the then Prince of Wales, condemned the theory; and after fully testing vaccination, declared it to be no protection against variolous infection; I have his work before me. He says, "We are yet left unsatisfied as to the nature and origin of what is called cow-pox; it is a disorder known only to the cow doctor in dirty dairies, though we are taught to play

play with it as a blessing revealed from heaven, to this enlightened age."

696. Mr. *Candlish*.] What is the date of that?—1807. "What has been called the cow-pox, is not a preservation against the natural small-pox." That was the testimony of Mr. Birch. Moseley, Moore, Gregory, Copland, names known to every medical man, and many others, might be quoted, all of whom declared the theory to be fallacious. Mr. Birch anticipated the results of vaccination, when extensively adopted in words which will be found at page 40 of his book. He says that "Mr. John Hunter did not give the experiment much credit."

697. *Chairman*.] What was the date of that?—1807; from this I apprehend that the theory of Dr. Jenner, tested by such men, and tested by the experience which has been derived at small-pox hospitals, will convince all men who are unprejudiced in their inquiry that the utility of vaccination is at least very doubtful. I now proceed to discuss the next proposition: That vaccination is not prophylactic against small-pox, as proved by the statistics of small-pox hospitals and other records. The theory propounded by Dr. Jenner was that persons once affected were "protected for ever," those are his words. Dr. Jenner lived long enough to witness the failure of his theory, and set up the excuse that there were two kinds of cow-pox, true and spurious, to which I have referred; Dr. Jenner admitted the failures, and attempted to explain them in various ways. The cow-pox which occurs spontaneously he found subsequently was not protective, and he gives here a caution lest persons trusting to it should be disappointed; the passage is at page 7 of the edition of 1801; he says there is a form of natural cow-pox, which is not protective; "Pustulous sores frequently appear spontaneously on the nipples of cows, and instances have occurred of the hands of servants employed in milking being affected with sores in consequence. Those pustules are of a much milder nature than those which arise from that contagion which constitutes the true cow-pox; they are always free from the bluish or livid tint so conspicuous in the pustules of that disease; no erysipelas attends them, nor do they show any phagedenic disposition as in the other case, but terminate in a scab, without creating any apparent disorder in the cow. This complaint appears at various seasons of the year, but most commonly in the spring, when the cows are first taken from their winter food, and fed with grass." It is very apt to appear, also, when they are suckling their young. "But this disease is not to be considered as similar in any respect to that of which I am treating, as it is incapable of producing any specific effects on the human constitution. However, it is of the greatest consequence to point it out here, lest the want of discrimination should occasion an idea of security from the infection of the small-pox, which might prove delusive." If the theory of Dr. Jenner had been true, there would have been no necessity for re-vaccination, for which there is such a rage at the present time. The memoranda lately put forward in the name of the Lords of the Privy Council, by the medical officer of the Council, Mr. Simon, state that by vaccination in infancy, most people are completely insured for their whole lives against an attack of small-pox. Subsequently he says, partly because of the existence of a large number of imperfectly vaccinated persons, and partly be-

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cause also even the best infantine vaccination, sometimes, in process of time loses more or less of its effect, it is advisable that all persons who have been vaccinated in infancy should, as they approach adult life, undergo re-vaccination. Why? because my Lords of the Council are made to say that the population always contains very many persons who, though vaccinated and believing themselves to be protected against small-pox, are really liable to infection, and may in some cases contract as severe forms of small-pox as if they had never been vaccinated. I compliment Mr. Simon on for once uttering such a patent truth as that; but still it is very unsatisfactory to a community, when a panic is prevailing, to tell them first that they are secured for ever if the operation be properly performed, and then subsequently to advise the re-vaccination of everybody, lest they should be overtaken by small-pox, and it should kill them. I think one answer to that would be (if Mr. Simon had not omitted to state it) that Prince Arthur, who had been vaccinated, could not, I suppose, have been properly vaccinated, or he would not have caught small-pox, which I believe he caught in Scotland, where it is supposed to have been extinguished by vaccination.

698. Are you aware that he did catch it in Scotland?—I learned that he paid a visit to Scotland, that he caught the small-pox there, and came home with it.

699. Mr. *Jacob Bright*.] When was it that he took small-pox in Scotland?—It is about three years ago, I think.

700. Dr. *Lyon Playfair*.] Do you remember the dates?—I do not remember the dates.

701. Mr. *Muntz*.] Do you know as a fact that he had the small-pox?—Yes, and he was attended by three physicians at Greenwich. Mr. Simon says, "In large part vaccination is certainly good, otherwise small-pox could not, within half-a-century, have been, as it has been, rendered comparatively infrequent and innocuous." The answer to that is, I think, that we have a heavier epidemic now than we have had for 30 years. Now I take up the report of the Highgate Small-pox Hospital for 1866. I called on Mr. Marson yesterday for the subsequent reports (which I unfortunately mislaid), but he was out, but this will suffice. At page 7 of this report Mr. Marson says, "The ratio of vaccinated cases to the whole admission of small-pox patients, as calculated from a series of 16 years ending with 1851 was 53 per cent., a proportion which has gone on progressively increasing. In the epidemic of 1851-52 it was 66.7 per cent.; in that of 1854, 1855, and 1856 it was 71.2 per cent. In 1859-60 it was 78 per cent., and for the four years of the present epidemic 1866, it has been 81.1 per cent." In the report for 1868 it was 84 per cent., that is to say, putting it the other way, only 16 of every 100 patients admitted in that hospital were found without the protective mark.

702. Mr. *Hibbert*.] You spoke with regard to 1868 just now; that does not appear in that report; what do you speak from?—I can vouch for its correctness; I have seen the report, and I quote from memory. It has gone on gradually increasing, showing that there is a greater disposition in the vaccinated in adult life to small-pox than in the unvaccinated. In the year 1866, in this same report, I find that 425 unvaccinated cases were admitted, and 1,605 vaccinated, who had no business in that hospital if vaccination

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afforded protection. So far from protection being afforded, I find in the Small-pox Hospital returns from 1836 to 1851, that no less than 331 died of 3,094 cases, all having been vaccinated, (that will be found in Mr. Simon's papers), showing a mortality of nearly 11 per cent.; the mortality on the whole admissions being 21·38 per cent., or nearly 21½ per cent.; yet in the face of those facts, the College of Physicians lately issued a circular, which contains a statement that the mortality in the vaccinated was less than one per cent.

703. When was that?—It was a circular sent forth by the College of Physicians, which appeared in the "Times," I think it was on February 9th. I now come to more recent statistics; I take up the "Times" newspaper of February 6th, and I find a report of a meeting of the Asylums Board, with Dr. Brewer in the chair; at that meeting, a report was handed in by Dr. Greive, of the Hampstead Small-pox Hospital. The honourable Member for Colchester is intimately acquainted with this, but it is a matter which must come before you, and which must come before the Asylums Board, and I took some pains in analysing those statistics. Dr. Greive's report is dated 4th February; he stated that during the last fortnight, 149 patients had been taken into the hospital, and of this number, 28 were admitted on the 3rd; this made a total of admissions since the opening, of 582. The number in the hospital on the night of the 3rd, was 232; "The cases presenting themselves during the past week" (the report went to say) "have not been of so extremely malignant a character as those in the preceding fortnight, and it is to be hoped that this abatement may continue. The death rate" (this is what I want to call the Committee's attention to), "since the opening of the hospital, has been 17 per cent., which may seem high, but it must be borne in mind that the demand for beds for the several parishes has been always much in excess of the supply; and as a consequence, many of the worst cases have been sent here. The state in which many of the patients come to the hospital is shown by the fact that of the 99 deaths that have occurred, 24, or one-fourth, occurred within 48 hours of their admission, and a considerable number of them died on the third day." Many of them were moribund when removed from their beds, which Dr. Aldis, a medical officer of health, says is sufficient to kill them. I want to call your attention to this statement, that 582 cases were admitted, of whom 232 remained in the hospital, leaving 350; that 99 deaths occurred, and Dr. Greive says the per-centage of mortality is 17; I make it 28. In all that I know of hospital management the patients that have passed in and out are disposed of and accounted for, and so many remain. "Of the 582 patients who have passed through this hospital" (they had not passed through the hospital, 350 had passed through the hospital), "423 have been protected by vaccination, and 159 have been unprotected. Of the former 29 have died, of the latter 68, a fatality among the vaccinated of something under seven per cent., and in the unvaccinated nearly 43 per cent." Now, those figures are wrong, because he has reckoned the per-centage upon the whole admissions, and not upon the patients who have passed through the hospital, and so they are fallacious. I now have a later report of Dr. Greive, which I obtained from the offices of the

association, and we will analyse that, if you please. This report is dated the 18th day of February. At pages 386 and 387 will be found Dr. Greive's report of the Hampstead Hospital, and here he tells us that 748 were admitted, of whom there were 545 vaccinated, and 203 unvaccinated (as usual the larger proportion being vaccinated), that 133 deaths occurred. He tells us that the rate of mortality is about the same as in the previous report, but the rate of mortality here is 31·8 per cent., and not 17 per cent.; for 133 died of 418 cases that actually passed through the house; because he tells us that there remained in the wards 330 patients; but he mistakenly (I hope not intentionally) reckons the per-centage on the whole admissions, including the 330 yet undisposed of. I ask Dr. Greive how many of those have died, or whether he has made a computation? Those which are called figures representative of facts are no longer facts, and do not represent the proportion of mortality among the vaccinated and unvaccinated. Before leaving this, I will call the attention of the Committee to this report of the Asylums Board, showing the remarkable fact of the increased liability in the vaccinated to small-pox. Between the ages of 10 and 20 there were vaccinated 193, unvaccinated only 46; between the ages of 20 and 40, vaccinated 270, unvaccinated only 51; over 40, vaccinated 36, unvaccinated only four. One more remark I would make upon Dr. Greive's report; he says here that in all the patients who have been vaccinated and who died, there was some previous vitiation of the constitution. I quite agree with Dr. Greive. A proof of the vitiated constitution was found in the fact, not only of their having been vaccinated, but of their having small-pox, and dying after vaccination; but I was rather amused at his other remark, that many of them died because they were gin drinkers; but Dr. Greive does not tell us that the unvaccinated were gin drinkers. If only the vaccinated drink gin, I commend vaccination to the distillers, Hodges & Company. Such reports are not fit to go before this Committee, unless a commentary is given. They will go into the Blue Book, for I am pained to find here that Dr. Bridges, the Poor Law Medical Officer, quotes Dr. Greive, and Dr. Bridges is quoted by Dr. Farr in the returns, and so those returns go forth to Europe and to America as reliable. I have thus disposed, I think, of the theory of protection. One word, however, on the returns of the Registrar General; I find in the report for the week ending February 18th, the small-pox deaths in Liverpool returned as 50 per cent. unvaccinated, and in London 46 per cent. Dr. Farr also says that this epidemic is more fatal than any since the year 1840; but I would ask this Committee, why 1838 and 1839 are excluded, because in 1838, we had the heaviest mortality in the present century; I shall have occasion to refer to that when I answer the questions which the honourable Member for Colchester will put to me, which he put also to Dr. Collins on the last meeting of the Committee. I have now to call the attention of the Committee to an extract, which I have made from the Registrar General's returns in the first five weeks of the present year, the weeks respectively ending January 7th, 14th, 21st, 28th, and February 4th. I have extracted the mortality under five years of age, the number of small-pox cases and of scarlatina, whooping cough, &c., the whole mortality,

talities, and the mortality from zymoties, and I will give you the result. Under five years of age, the mortality in the first week was 651, in the fifth week, 603. In the first week, there died of small-pox in London, all ages, 79; in the fifth week, 196. The "Times" then had an article calling attention to the frightful mortality and the increased number of deaths. In the week ending the 7th January, scarlet fever is returned at 116, and in the fifth week at 55. you see the interchange. In the first week we have 79 from small-pox, and 116 from scarlatina. In the fifth week they change places, and we get 196 from small-pox and 55 from scarlatina. The question which naturally arises is, is there any increase in the mortality? Is it a misfortune to have the small-pox? It is not; in the first week 651 died under five years of age, in the fifth week 603. The whole mortality from all causes in the first week was 1,828, in the fifth week 1,683. The result of that examination is this, that as small-pox increases, infant mortality diminishes, and the general mortality sinks below the average always.

704. Mr. *Candlish*.] How do you make it out that that is always the case?—I put that in

evidence and I have ample proof of it; thus, there is a saving of infant life of 48 by the increase of small-pox, and on the general mortality a saving of 145. When scarlatina prevailed, the mortality was above the average; when small-pox prevailed the mortality was below the average. That is a law in this century. In the Registrar General's returns published yesterday, for the week ending February 25th, Dr. Farr states, that of the 227 deaths from small-pox in London last week, 119 were reported as unvaccinated, 86 as vaccinated, and the remaining 22 cases were not stated. Among the unvaccinated cases 29 per cent. were of persons aged 20 years and upwards; among the vaccinated 37 per cent. were of those ages. Now, I submit it to the College of Physicians, through this Committee, that if their statement be true that when the vaccinated are overtaken by small-pox, less than one per cent. die, 8,600 cases should have furnished these 86, for if they be right that must be the number. But they are not right; the facts deny that. I have now disposed, as briefly as possible, of the second proposition, the third will occupy a longer time.

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Tuesday, 7th March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Alderman Carter.
Mr. Stephen Cave.
Mr. Hibbert.
Mr. Holt.

Lord Robert Montagu.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, Esq., IN THE CHAIR.

Mr. CHARLES THOMAS PEARCE, M.D., re-called ; and further Examined.

Mr. C.T. Pearce, M.D.
7 March 1871.

706. *Chairman.*] WILL you now continue your answer with reference to your third and fourth propositions?—I now proceed to offer evidence in support of my third proposition, viz. :—

“That the natural liability to small-pox in adult life *diminishes* in the *unvaccinated*, whilst it *increases* in the *vaccinated*.”

The present panic has led to what may be called a *re-vaccination* mania. Mr. Simon, the medical officer of the Privy Council, in his memoranda which appeared in the “Times” of 7th February 1871, says—

“*Everyone* past childhood on whom re-vaccination has not before been successfully performed ought, without delay, to be re-vaccinated.” This advice is echoed by the College of Physicians, in the “Times” of 9th of February.

I think we have a right to test this advice and ascertain what value it possesses, and how far we are justified in interfering with a natural law unless the operation of that law is proved to be detrimental to life. I know of no natural law which can be charged with such an offence. Man suffers individually, socially, and politically when he infringes a law of the Creator, or neglects its observance. Let us examine how far this re-vaccination dogma is consistent with facts, and what justification there is for its infliction on the community.

Here it is necessary to go back to a period when vaccination was not in vogue, before 1798, indeed when Jenner published his first volume entitled “An Inquiry into the Causes and Effects of the Variolæ Vaccinæ,” and compare the natural susceptibility to small-pox then with that which is found in vaccinated or partly vaccinated populations.

In page xxx of Mr. Simon’s Papers on Vaccination, I find a statement that—

“Duvillard gives an analysis of the 6,792 deaths from small-pox which happened during nearly two centuries (1580–1760) in the city of Geneva, and the numbers belonging to the six successive quinquennials of life up to the age of 30.”

This was before the introduction of vaccination, and it is remarkable that *only 17 of the whole number of cases were over 30 years of age*, and only 141 died over 15 years of age of 6,792 deaths.

The ratio of deaths above 15 years of age was only two per cent. of all ages, while the ratio of deaths above 30 years of age to whole number was only $2\frac{1}{2}$ to a 1,000.

In the following, Duvillard’s cases are tabulated :—

Number of Deaths.	Ages.
5,467	Under 5 years of age.
1,058	From 5 to 10 years of age.
126	From 10 to 15 years of age.
54	From 15 to 20 years of age.
39	From 20 to 25 years of age.
31	From 25 to 30 years of age.
17	Above 30 years of age.

When it is borne in mind that the foregoing Table was carefully compiled by a most eminent man from records extending over a period of 180 years, the objection cannot be raised that it was singular and exceptional, and compiled during a particular epidemic.

Having now seen what the *natural* disposition to small-pox is in adult life when uninterfered with by vaccination, let us now see the contrast between the unvaccinated and the vaccinated. In the unvaccinated we have seen the comparative immunity in adult life, following the rule which applies to other diseases allied to small-pox, I mean measles, scarlatina, and whooping-cough, almost essentially diseases of childhood, I now proceed to show that this comparative immunity in adult life is altered by vaccination.

At page xxx of Simon’s Papers on Vaccination, Professor Heim, of the Wurtemberg Military Service, records 1,055 cases of small-pox in *vaccinated* persons of all ages. Of those above 15 years of age no fewer than 761 died, being *two-thirds* of the whole number

HEIM’S CASES.

Number of Cases.	Age.
40	Under 5 years of age.
68	From 5 to 10 years of age.
186	From 10 to 15 years of age.
275	From 15 to 20 years of age.
239	From 20 to 25 years of age.
172	From 25 to 30 years of age.
75	From 30 to 35 years of age.
1,055	

If we go to Copenhagen, we find similar results. In the *vaccinated*, of 653 cases there occurred—

Number of Cases.	Age.
14	Under 5 years of age.
102	From 5 to 10 years of age.
173	From 10 to 15 years of age.
289	
187	From 15 to 20 years of age.
156	From 20 to 25 years of age.
19	From 25 to 30 years of age.
2	From 30 to 35 years of age.
364	Above 15 years of age out of 653, or more than one-half.

In the Stockholm Hospital 961 cases occurred in the *vaccinated*. Of these—

Number of Cases.	Age.
3	Were under 5 years of age.
4	From 5 to 10 years of age.
13	From 10 to 15 years of age.
20	
45	From 15 to 20 years of age.
51	From 20 to 25 years of age.
40	From 25 to 30 years of age.
20	From 30 to 35 years of age.
17	From 35 to 40 years of age.
4	From 40 to 45 years of age.
2	From 45 to 50 years of age.
1	From 50 to 55 years of age.
180	

Here we have the cases in the proportion of 180 above 15 years of age to 20 under that age, or nine times the number. This contrast is shown very prominently at page xxxi of Mr. Simon's Papers on Vaccination.

PROPORTIONATE Distribution by Age of 1,000 Small-pox Deaths in Geneva before the Discovery of Vaccination, and of the same Number in Paris mostly vaccinated:—

AGES.	Geneva, 1580 to 1760, Unvaccinated.	Paris, 1842-1851, Mostly Vaccinated.
0-5 years	805	338
5-10 "	155½	59
10-15 "	18½	132½
15-20 "	8	
20-25 "	5½	329½
25-30 "	4½	
30-35 "		
35-40 "	2½	109½
over 40 "	-	31½
TOTAL - - -	1,000	1,000½

“Thus nearly one-third of the whole number of small-pox deaths in Paris happens between the 0.37.

ages of 20 and 30; one of the most startling facts I have learnt in my study of the subject. I can conceive for it no other explanation than that given in the text, and if this be the true one, there must prevail in Paris an appalling amount of post-vaccinal small-pox. I cannot say whether difference of race may make any difference to that *re-development of susceptibility to small-pox*; still less can I venture to surmise whether so extreme an instability in the results of French vaccination may depend on anything peculiar to the French administration of this important agency. But if those indications be sound, which in a later part of this section I deduce from the history of re-vaccination in the Prussian army, there would apparently be cogent reasons for inquiring very critically into the *quality of lymph* which is current for the vaccinations of France.”

But we need not go out of England to find an illustration of this terribly increased liability to small-pox in adult life in the *vaccinated*.

In the Highgate Small-pox Hospital 3,094 cases occurred in the 16 years from 1836 to 1851, *all vaccinated*. Of these no less than 2,825 were above 15 years of age, and no less than 1,584, considerably more than one-half, were between 20 and 30 years of age, while 1,058, more than one-third the number at all ages, were 20 to 25 years of age.

In one year, 1866, no less than 118 vaccinated patients died of small-pox in that hospital.

Coming to a more recent date, 1871, I find, in the Asylums' Hospital, Hampstead, according to the Report presented to the Board 18 February 1871, the following proportions of vaccinated and unvaccinated in the decades of life appear:—

Years of Age.	Vaccinated.	Unvaccinated.
Under 10 - -	46	102
10-20 - -	193	46
20-40 - -	270	51
Over 40 - -	36	4
	545	203

Here not only have we three fifths of the small-pox patients vaccinated, but we have the large and unnatural proportion of 306 vaccinated to 55 unvaccinated above 20 years of age.

The opinion I hold is, and the conclusion is inevitable, that vaccination is an interference with a natural law, and that re-vaccination, recommended by the Privy Council and the College of Physicians, predisposes to small-pox in adult life, and it is highly dangerous to resort to it during the prevalence of an epidemic. Inoculation with vaccine lymph will not prevent a person from being *infected* while the variolous atmospheric conditions exist which develop the disease.

It may be urged that, at least, there is a saving of *infant* life by vaccination, looking at the protection afforded by the operation, as shown in the statistics of early ages. As a rule, I admit the greater liability in children to small-pox, but there are happy variations in the susceptibility, nor is a child at all times in the same state of receptivity. Six weeks ago I attended a little girl

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girl named Rolins, in Rutland-terrace, Pimlico, aged five, with small-pox; she had *not* been vaccinated (a lodger in the house had been taken to hospital with small-pox); she had it in the semi-confluent form; was delirious one night; the pocks were fully developed over trunk and limbs; she had a bath twice a day through every stage; she recovered remarkably well. Her little brother, two years of age, also unvaccinated, was frequently at her bedside during the whole course of the illness, played with her in the latter stage of the disease, before she left her bed, and that little child has not taken small-pox; it is hearty, the picture of health. The mother, who is pregnant, ailed a few days in bed, but the infection went no farther. The patient was kept clean, and disinfectants were employed. I was glad to find that Dr. Farr, in the 30th Report of the Registrar General, page 215, very pertinently remarks that "small-pox, as a general rule, occurs only once in life; *some children enjoy an immunity against an attack*; they cannot be vaccinated, they cannot be inoculated; others are infected by the slightest exposure; and under infection, some take the disease slightly, some malignantly, fatally."

The protective power of vaccination has been over-estimated. The susceptibility of the subject to small-pox, as to other diseases, depends on constitutional states which vary in different individuals, and not on any artificial means of protection, such as vaccination, though it may sometimes act as a charm. Rhazes, an Arabian physician, who flourished at the beginning of the tenth century, whose work on small-pox and measles was translated by the Sydenham Society, points out most plainly that different bodies have different susceptibilities, some never taking small-pox but are inclined to measles.

To assume that every person "unprotected" by vaccination is liable to small-pox, is unscientific, irrational, and unsupported by facts; such negative evidence cannot guide you to a correct judgment of the value of vaccination. I have seen a great deal of small-pox during an epidemic in Northampton in 1853-4, while I was in practice in that county, and I have observed in that population, which includes a very large number of shoemakers (and I was much struck with it), the frequency of mild cases in the unvaccinated, and severe cases in the vaccinated. In one house in the town of Wellingborough, ten miles distant from Northampton, there was a family of seven, all unvaccinated; the eldest was 20, the youngest about five. One of the seven, the little one, had small-pox severely. Two elder ones had it moderately; the remaining four did not take it. Had that family been vaccinated, I should at that time have attributed the mildness of the cases to that cause. Eighty-nine cases of small-pox, at various ages, came under my medical treatment, all of whom, with my assistant (Dr. Henry Thomas, now of Chester), I personally attended. Two cases died. One was Mrs. Rapiér (the wife of my dispenser, now a chemist in Norwich), who caught small-pox in her confinement, *vaccinated*. The other death was a boy three years old, the son of Mr. Clarke, fishmonger, in Northampton (now retired from business and living at Kingsthorpe), unvaccinated. That child's death was of typhoid, arising from his bedroom being over a store of fish, venison, and refuse, in one of the hottest July months which I remember; but for this circumstance I believe the child would have recovered.

When another epidemic of small-pox visited Northampton in 1860 great efforts were made by the medical men, aided by the Vicar of All Saints, the Rev. Sydney Gedge, to get the people vaccinated. I am not ashamed to own that I lifted up my voice against the polluting practice, and from that day to this, as the Members, Mr. Charles Gilpin and Lord Henley know, the intelligent shoemakers of Northampton have evinced a determined resistance to the Compulsory Vaccination Act.

I will not weary this Committee with a longer detail of my personal experience. I may add that Dr. Corner, Medical Officer of Health in the Mile End District, London, reported to the Board of Guardians twelve months since, four cases of small-pox in one house in his district; two of them were vaccinated, two were "unprotected"; the two unprotected recovered, and the two vaccinated (protected!) died. The "Lancet," in reporting the statement of Dr. Corner, omitted however to tell its readers that the two which died had been vaccinated.

Proposition 4.—That all other diseases than small-pox are more severe and more fatal in the vaccinated than in the unvaccinated, especially scarlatina, measles, whooping cough, diarrhœa, fever, erysipelas and phthisis."

In placing this branch of my subject before you, I must beg permission to say that statistics of disease and the registration of cases in hospitals and other public institutions are so defective in this particular, that no very accurate conclusions can be arrived at, which, in the former branches of my subject, can be seen at a glance.

It is some years since I began to observe the great difference in the intensity of diseases in children more especially, and it was long before I could make up my mind to believe that my suspicion, that the severity of exanthematous fevers was greater in the vaccinated, was correct.

I took great pains, however, on all occasions to ascertain in a somewhat extensive practice, whether the patients coming under the care of myself or my assistants, bore the marks of vaccination.

My suspicions were confirmed, and long observation has convinced me that I am not mistaken.

There is no question, I think, that all who have been vaccinated suffer more severely than the unvaccinated.

Hence, as I believe, we hear of all the children in a family being swept away by scarlatina. The present Archbishop Tait was a sufferer to this extent.

Dr. Robert Watt of Glasgow, Lecturer on the Theory and Practice of Medicine in Glasgow, who published in 1813 a treatise on chin-cough or whooping cough, dedicated to Sir Gilbert Blane, stated that the introduction of vaccination diminished the mortality from small-pox, which in

1783 to 1788	-	-	was 20 in 100
1789 to 1794	-	-	was 18 in 100
1795 to 1800	-	-	was 19 in 100
1801 to 1806	-	-	was 9 in 100
1807 to 1812	-	-	was 4 in 100

Dr. Watt states that "this *gratifying result of vaccination* (which had been pretty fully established, perhaps as much so as in any city in the empire) was counterbalanced by a slight increase in

in the proportion of deaths by whooping cough, and a great increase in the deaths by measles. What gain was there, then, in interfering by vaccination?

Dr. Watt says "In the first period when a third of all the deaths under five years of age were caused by small-pox, a child had the *best chance of reaching its tenth year*." I began to reflect how different the case must be now. In eight years little more than 600 died of the small-pox, whereas in one year, 1784, the deaths by that disease alone amounted to 425, and in 1791, to 607, which on both occasions exceeded the fourth of the whole deaths in the year. To ascertain the real amount of this saving of infantile life, I turned up one of the later years, and by accident that of 1808, when to my utter astonishment, I found that still a half, or more than a half perished before the tenth year of their age. I could hardly believe the testimony of my senses, and therefore began to turn up other years, when I found that in all of them the proportion was less than in 1808; but still, in taking an average of several years, it amounted to nearly the same thing as at any former period during the last 30 years. This was a discovery I by no means expected, and how it could have come to pass appeared to me inexplicable.

"From every circumstance which had come under my observation, the efficacy of vaccine inoculation appeared certain. The experience of 13 years' pretty extensive practice had confirmed me fully in this opinion. But the question recurred, how are we to account for the same or nearly the same number of deaths under 10 years of age? As no new disease has appeared, the deficiency occasioned by the want "The small-pox must have been made up by a greater mortality among the other diseases of children. Has it been equally divided among them, or has a greater share fallen to some than to others?"

Dr. Farr in commenting on these observations (Vol. 30, page 214), by Dr. Robert Watt, makes these important and apposite remarks, showing incontestibly that no *saving* of infant life has been effected by vaccination.

"The mortality of children is as high, probably higher than it was in the last 18 years of the last century."

So much for the increased severity of measles.

Dr. West, Physician to the Hospital for Sick Children, Waterloo-road, London, speaking of the increased severity of measles says; "With reference to the alleged increased prevalence of measles since the introduction of vaccination, it suffices to say that vaccination preserves only from small-pox, not from any other disease.

Measles is, next to small-pox, the most contagious of all fevers. The child, who 60 years ago would have died of small-pox, is now preserved from that, often only to catch, *perhaps to die of, measles*. An increased number of deaths from the latter disease was the unavoidable consequence of the comparative extinction of the former; the fact is obvious, and is noticed by the late Dr. Watt of Glasgow, though for the moment lost sight of by some philanthropists."

Now as to scarlatina.

What evidence have we that scarlatina is more severe and fatal now, since vaccination came into play in the lymphatics of our children?

Sydenham describes simple scarlatina distinctly; he does not refer to the throat affections, and says the patient can only die by the doctor's default.

0.37.

Frank describes the disease now as the most dreadful scourge in Europe. Dr. Farr, in the 30th Report of the Registrar General, page 215, speaks thus of the increased malignity of scarlatina, since the passing of the Vaccination Act of 1853.

"There are two diseases, scarlatina and diphtheria, itself a new type of disease, which have been exceedingly fatal since the year 1855, when diphtheria was first distinguished in the returns. Up to 1857, it was apparently confounded with *Cynanche-Maligna*; but in 1858 it became popular, and in that year 4,836 deaths, in 1859 no less than 9,587 deaths, were ascribed to diphtheria. In 1858 and 1859 the deaths from scarlatina and diphtheria together were 30,317 and 29,494; in the two years 1863-4, the deaths from the same causes rose to 36,982 and 35,164.

The mortality in 1858-9 from small-pox had fallen to 3.35 and 1.97 annually in 10,000 living, while from scarlatina and diphtheria the mortality had risen in the two years to 15.72 and 15.13. In 1863-4, the mortality from small-pox was 2.93, and 3.73 from scarlatina, and diphtheria 18.18 and 17.08; while small-pox dwindled these two zymotic diseases flourished at the expense of the growing population.

I think there is some reason for inferring that this increased malignity and largely increased mortality from scarlatina is to be traced to the operation of the Vaccination Act of 1853, which led to a very considerable increase in the proportion of vaccinations to births.

In the 22nd Vol. of the Poor Law Board Reports, published 1870, at page 378, I find a list of the number of persons vaccinated from 1852 to 1869.

In 1853, the year in which the Vaccination Act passed, the per-centage of vaccinations to births was 62.6; in the following year, 1854, it was 112.1. Since that year the per-centage of vaccinations to births has varied between 63 and 91. Since 1853 there has been a very considerable increase in the number of vaccinations. This has been accomplished in two ways: first, by pressure being put upon Boards of Guardians by the Privy Council and the Poor Law Board; and secondly, in a most effectual manner by rewards to vaccinators.

Rewards have been given to public vaccinators under direction of the Privy Council, and vaccinators have been first paid for their work and paid over again for "*doing it well*." A new way of fulfilling Government contracts.

If every workman is to be treated on this principle the Chancellor of the Exchequer will have to increase the income tax.

The deadly work *was done*, and on the testimony of Dr. Farr, scarlatina and diphtheria *have increased*.

I have no hesitation in saying that this increase of malignity in scarlatina and measles is due to the contamination of the body by vaccination (so called).

I fully concur in the remark of Dr. Farr, in the 30th Report, page 219, who says, "To operate on the mortality, protection against every one of the fatal *zymotic diseases* is required, otherwise the suppression of one disease element opens the way to others."

I now come to another consequence of vaccination, I mean diarrhoea.

I can confirm, from long experience, what Dr. Collins said in his evidence on Tuesday

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Mr. day last, before this Committee on this
C. T. Pearce, point.

M.D. I know that diarrhœa frequently follows vac-
7 March cination, and of a severe enteritic character. I
1871. have observed this for years, and I have induced
several medical friends to turn their attention to it.

I am the more confirmed in my opinion than
ever by the report of Dr. Seaton on vaccination
in France, in the 12th Report of the Medical
Officer of the Privy Council.

At page 176 of that report, I find "the calves
after inoculation suffer not infrequently from
diarrhœa." At page 178, speaking of the trans-
ference from calf to calf of the lymph, the re-
port says, "The health of the calf, however,
affects the character of the eruption, for it has
been observed that when *diarrhœa happens in the*
course of its evolution, the pustules are smaller in
size and less full."

Again, "In Depaul's seventh and eighth ex-
periments, for example, the calves suffered
seriously from diarrhœa."

I now come to the subject of fevers, and here
our defective registration is again seriously against
accurate deductions. I must go to France for
statistical evidence; I am sorry I have not now
the original from which I made the extract found
in my essay at page 28.

Dr. Perrin, a French hospital physician, states
of 114 cases of typhoid fever, 76 had been vacci-
nated, 38 not vaccinated; of the 76 vaccinated
35 died, more than 40 per cent.; while of the
38 unvaccinated only three died.

In the army of Paris, of 25,000 men, according
to Baron Michel's official report of the cases in
the Hôpital du Gros Caillou, there died of—

	1816.	1838.
Small-pox - - -	4	21
Fever, intestinal and con- tinued - - -	46	276
Chest disease - - -	159	159
All other causes - -	41	41
Total Deaths - -	250	509

Here the mortality was doubled, as is believed,
by vaccination.

My professional experience bears out these
statistics. I have no hesitation in saying that the
vaccinated patient is disposed to suffer more se-
verely than he who has been the natural subject
of small-pox. The next disease to which I would
call your attention is erysipelas.

That vaccination directly produces erysipelas
there is no doubt; indeed Jenner emphatically
stated that no vaccination was protective which
did not produce erysipelas, and have we not proof
that thousands of infants die of erysipelas in
the *first year of life*?

DEATHS from ERYSIPELAS in *England*.—(Ex-
tracted from the Thirtieth Report of the
Registrar General, page 230.)

Year.	Under One Year of Age.	Total under Five Years of Age.	All Ages.
1862 - - - -	458	563	1,523
1863 - - - -	612	745	1,920
1864 - - - -	618	733	2,104
1865 - - - -	579	682	1,963
1866 - - - -	527	627	1,675
1867 - - - -	467	544	1,450
Total in Six Years - -	3,261	3,904	10,635

Nearly one-third of the whole number of deaths
from erysipelas consist of infants under 12
months old; the year in which vaccination is
performed.

Coroners' inquests have been held on the bodies
of children whose deaths have been the direct result
of vaccination.

Dr. Lankester, coroner for Middlesex, held an
inquest on the body of a child of Mr. Emery, of
Great Portland-street, London, about a year and
a half ago. The verdict returned in that case
was "Died of Erysipelas, caused by Vaccina-
tion." Mr. Bedford, the coroner for Westminster,
held an inquest on another child who met its death
at the hands of the same vaccinator as in the
former case, and I have every reason to believe
that a large amount of evidence will be hereafter
placed before the Committee to the same effect.

Next in order is the subject of phthisis, and
this brings me to the circumstances which led me
to the investigation of this subject. I have re-
lated the occurrence in my Essay on Vaccination,
at page 67.

The lady in question is Mrs. Betts, of the
Drapery, Northampton. I was then in practice
in that town, and I was medical referee for the
North British Life Assurance Office, one of the
largest and most prosperous of the Scotch
offices.

Mrs. Betts presented herself to me, desiring to
effect an insurance on her life, with the view of
providing for the younger members of her
family—her children, she having become a
widow. She thus related her previous history.
"I am 40 years of age. I have a brother living,
who is 44. My brother and I are the only sur-
vivors of a family of 10 children. Five of the
eight who are dead, died in childhood, two at the
age of puberty, and one at 18 years of age; the
latter three died of consumption."

On my asking her how she accounted for the
cases of consumption (for their death from that
course might militate against her being accepted
as a first-class life), she said:—

"My poor mother always attributed the deaths
of her eight children to vaccination."

There was no tendency to consumption on
either side; for generations they were all
healthy country people. She proceeded:—

"My brother and myself had small-pox. Nei-
ther of us were vaccinated, for it was not much
in fashion in the country when I was a child;
but the eight younger children born after me
were all vaccinated."

I confess I was not prepared for the conclusion
to which her mother arrived, for I then in my
practice,

practice, which was one of the largest in the county, had pretty extensive experience in vaccination.

I, however, having before (and since) often learned more really useful things in medicine from old women than I learned in a London hospital, I could not forget or shake off the disturbance of my faith in vaccination. I therefore proposed to myself the solution of the two following questions, viz. :—

1st. Was consumption introduced into that family by vaccination? or,

2nd. Did small-pox alter the diathesis of the two survivors of that family?

The well-ascertained fact that there was no hereditary cause, that there was no local cause, nor any of the ordinary causes, such as defective nutrition, re-breathed air of workshops, &c., I came to the conclusion that the charge against vaccination looked very suspicious, and I entered on a field of inquiry which I have neither completed nor tired of.

I have noted the extreme rarity of cases of phthisis in those who have had small-pox. I have again and again contrasted the ruddy appearance of those who have had small-pox with the pallid cheeks and the decayed teeth of the vaccinated.

I look for evidence of my suspicion that phthisis and bronchitis are increasing in this country, and I am confirmed in my suspicion that the old woman was right, and I have come to the conclusion that chest diseases have increased in proportion to the increase of vaccinations.

Phthisis and, indeed, all chest diseases, are more severe in the vaccinated than in the un-vaccinated.

The increase of mortality from phthisis is evident since vaccination was introduced. Indeed, in the Registrar General's 29th Report, p. 78, I find that of 53,734 deaths from phthisis of persons, the greater part of them adults, prove the great importance of the study of this disease; at the age of 20 and under 25, the deaths of young women from all specified causes were 8,477; and of these, 4,290 (being more than one-half) died of phthisis.

Dr. Quain, of the Brompton Hospital, said, in his reply to Mr. Simon's Circular, that in only about 30 per cent. of cases of phthisis were found marks of vaccination; but on asking Dr. Symes Thompson whether a note was taken of the patients admitted into the Brompton Hospital for Consumption, he said no register was made. I apprehend, therefore, that Dr. Quain's answer to Mr. Simon was a guess only.

But if we study statistics, the fact that phthisis increases with the extension of vaccination is plainly shown.

The death-rate of phthisis and bronchitis per million living in the five years—

1850 to 1854.	1855-59.	1860-64.	1865.
was 3,827·6	4,006·2	4,422·6	4,341

Here we have a steady increase of mortality of chest diseases coincident with vaccination. There is a special reason why the death returns from bronchitis should be included in, or rather added to, phthisis.

In that diagram you will perceive that phthisis apparently decreased in the earlier years. Phthisis 0.37.

was very high when bronchitis was very low. This arises from the altered nomenclature, or rather a fashion in returning death certificates. As the business of life offices increased, the term *bronchitis* has been put in death certificates where phthisis would, in the absence of such policy of insurance, have been inserted.

On speaking to Dr. Farr, at Somerset House, anxious to ascertain, if possible, whether phthisis presented a heavier mortality now than prior to the introduction of vaccination, he remarked that the returns prior to the year 1838 were very indefinite and unsatisfactory. A large number of causes of death were included in the term "consumption," which are now returned in their proper place. Still the fact remains, that in the last 30 years phthisis has increased.

I quoted to Dr. Farr the reply which I had, in an interview with Dr. Marson, of the Highgate Small-pox Hospital. My question to him was, "How do you account for the increase of phthisis after the age of puberty, more than half of those who die from 20 to 25 years of age being of phthisis?" His, Mr. Marson's, reply was:

"I can quite understand that increase, because thousands of rickety and delicate children who would have died in childhood of small-pox, are saved by vaccination, to *die afterwards* of phthisis." But if thousands of children are saved from death by vaccination, there would be some proof found in a diminution of infant mortality.

That there is *no* decrease in infant mortality, I have already told you.

I give you the statistical data for this opinion; that the general death-rate in England is increasing we have abundant evidence. In the 13 years, 1841 to 1853, prior to the passing of the Compulsory Vaccination Act, the average was 22·38 per 1,000 of population. In the 13 years, 1854-66, following the Compulsory Vaccination Act, the death-rate was 22·47. If we deduct the mortality by cholera epidemics, the figures will stand thus—

In the first period	-	-	-	22·12
second „	-	-	-	22·34

But leaving this general death-rate for the moment, let us take infant mortality, *deducting cholera*. Death-rate of infants under five years of age, in the 13 years 1841-53, was 8·78. In the 13 years following the Compulsory Vaccination Act, it was 9·19—increase of 0·41 per 100,000 of population, equal to an increase of the number of deaths of 106,103.

The *increase* of vaccination, as shown in the Poor Law Board returns, therefore, may have led to the untimely death of upwards of 100,000 children in 13 years.

I am not prepared to vouch for the accuracy of these figures, though carefully compiled from the Registrar's returns. They are, like many other returns, *fair deductions* from data on authority.

I *am* prepared to put before you this much, that interference with one form of zymotic disease, by an unnatural and unscientific practice called vaccination, you *do increase* and *not diminish* the mortality as you have hitherto been led to believe.

707. Are you prepared to give evidence now upon your fifth proposition?—Yes; and in doing so I have taken pains to exclude as much as possible all that might be taken to be a mere expression of opinion, and I have condensed as carefully as possible the facts necessary to establish this proposition.

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708. What is your fifth proposition?—That the general mortality is not diminished by vaccination may be proved by the statistics of every country in Europe, and by other records. If it were true that vaccination is a means of economizing life, as stated by those under whose directions, and at whose suggestion the Act of 1867 was passed, the theory would be confirmed on an appeal to the statistics of those countries in which the experiment has been tried. I confess myself when I became sceptical of the advantages of vaccination to have been startled by the statements that “millions of lives have been saved by vaccination.” Such a question can only be satisfactorily settled, said Hammerniek, by an uninterested and independent committee, who would take cognizance of the simple facts bearing upon the matter. Such a committee, I trust, I am now addressing. When a stipendiary magistrate tells an innocent woman at the Thames Police Court that millions of lives have been saved by vaccination, and that she must go to prison for her folly in refusing to have her child vaccinated, I take note of it, but it comes to me without authority. When the late Sir James Simpson, of Edinburgh, at the Congress of the Social Science Association in Belfast, said that vaccination saved 80,000 lives every year, and that it was the means of saving a number of lives equal to the whole number of the population of the United Kingdom every 25 years, I stood aghast, and was led to analyze those statements. But to the question: is the general mortality diminished by vaccination? In other words, is there any saving of life? To this question I say emphatically, No. The figures which have been placed before you as evidence of the value of vaccination, and which figures may yet be again brought before you, are delusive, and have no just relation to the question; the reason being that too limited a view has been taken, and that the effect of vaccination on small-pox mortality has been assumed, without reference to the general mortality. Let us take first the Report of the Highgate Small-pox Hospital. The ratio of the vaccinated to the whole number of admissions is now, or was recently, 84 per cent. In the Session of 1867, in a debate on the Vaccination Bill then before the House, the noble Lord, the Member for Huntingdonshire, then a Member of the Government, stated, as a reason for amending the Act of 1853, and increasing the stringency of the law, that probably not more than 50 per cent. of the population of this country was vaccinated. Although I am not disposed to rely upon the accuracy of the estimate, I will assume, for my purpose, that 50 per cent. of the population are vaccinated. Last month the casual paupers of the parish of Marylebone, applying for relief, were examined under the directions of the guardians, when only 25 per cent. of that class were found to be vaccinated. I will admit the noble Lord’s estimate, and suppose that a community, let it be a parish, consists of a population of 100,000, that one-half are vaccinated, and the other half unvaccinated.

709. Lord Robert Montagu.] I think what I stated was that not more than 50 per cent.; that is to say, perhaps less than 50 per cent. were vaccinated, and not that fully 50 per cent. were vaccinated?—Yes; well, 84 of every 100 patients in the Small-pox Hospital are taken from the vaccinated portion of the community, the one-half,

and 16 of every 100 from the unvaccinated portion, the other half. From the vaccinated 50,000, 42,000 would have small-pox, of whom the ratio of deaths being 11 per cent. 4,240 would die. From the unvaccinated 50,000 there would be 8,000 having small-pox, of whom (the ratio of mortality being 34 per cent.) 2,720 would die; so that there is a relative loss of no less than 1,520 lives more in the vaccinated than in the unvaccinated half of the population. This is not all. There are 42,000 centres of infection in the vaccinated, to 8,000 centres of infection in the unvaccinated portion. I will put this comparison in another way which may familiarise this Committee with the subject. There are 658 Members in the House of Commons, a division takes place, and the Ayes, the vaccinated, go to the right, and the Noes, the unvaccinated, go to the left, the numbers being equal; of the 329 vaccinated, 277 get small-pox, of whom there die 30; of the other half 53 get small-pox, of whom there die 28. However extraordinary it may appear, it seems that by a law of mortality death demands a certain number; a certain proportion of a population must die. How that proposition is maintained has been alluded to in my Essay on the “Tested effects of Vaccination on Health, Mortality, and Population.” In that work the law of vicarious mortality is illustrated in various ways, by statistics which are of an official character. To return to small-pox, death demands and seizes so many victims, laughs at human interference with nature by vaccination, and as the mortality in the unvaccinated, admitting the proposition given by Dr. Marson, is five times greater than in the vaccinated, that is as 35 per cent. to 7 per cent., five times the number of patients are of the vaccinated portion, and thus death gets its number, and takes neither more nor less from the whole population; but the loss to society is greater under vaccination, as the largest proportion attacked are adults or youths in their teens. According to the Report for 1866 of the Highgate Small-pox Hospital, of 3,094 cases of vaccinated patients, no less than 2,825 were above 15 years of age, 1,058 of whom were between 20 and 25 years of age, while in the unvaccinated the proportion in adult life was considerably less. I think it is manifest, from the foregoing, that the interference by vaccination does not diminish the mortality. All or any interference with a natural law is a loss, and without justification. In the last century, in 1722, inoculation with variolous matter was introduced into this country by Lady Mary Wortley Montague, and for half a century at least it was accepted as an advantage, universally adopted by the medical profession, and strongly urged by the College of Physicians. Dr. Heberden, in his work entitled “Observations on the Increase and Decrease of different Diseases, by W. Heberden, M.D., F.R.S., 1801, quarto,” says, at page 36, “In London more persons have died of the small-pox since the introduction of inoculation; out of every 1,000 deaths in the bills of mortality attributed to the small-pox during the first 30 years of the 18th century, before inoculation could have had any effect upon them, they amounted to 74. During an equal number of years, at the end of the century, they amounted to 95 in 1,000, an increase of no less than 30 per cent. by that interference by inoculation.” It is a remarkable fact that the dawn of the present century witnessed a considerable subsidence

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subsidence of small-pox. This century seems to have opened most promisingly for the human race. Throughout Europe the formidable diseases which at intervals during several centuries had visited every country ebbed away with advancing civilization. Black death, gaol fever, leprosy, plague, &c., diseases now extinct, no longer terrified and decimated dense aggregations of the human family; small-pox, too, had become less prevalent, a fortunate coincidence with the introduction of vaccination. An important saving of life was promised by Jenner in his petition to Parliament for a reward, and thoughtful men soon began to inquire "*cui bono?*" In a volume published in 1803, entitled "The Report on the Cow-pock Inoculation at the Vaccine Pock Institution, London, written by the Physicians to the Institution," at page 111 it is interesting to find the following passages: Those physicians say, "It is not manifest that the vaccine inoculation has been a benefit to population, however great a one it has been to individuals." This sentence, written by the physicians of the Vaccine Pock Institution, 13 in number, among whom were the names of Drs. Pearson, Keate, Brande, Nelson, and Carpue, bears a most important part in the history of this branch of my evidence. And what are the facts upon which those men, with the approval of their President, the Earl of Cholmondeley, the Right Honourable Lord Petre, Sir George Baker, Bart., Sir William Lee, Bart., the Rev. Dr. Henry Jerome De Salis, &c., based their opinion? They had before them, as their report shows, the tables of Heberden, of Lettson and of Partridge; they had the bills of mortality of London, and they demonstrated that which it is my pleasure to present to your notice, to the profession, and to my countrymen; there is no saving of life by vaccine inoculation. When they published their report of four years work, 30,000 vaccinations had been performed in London within the bills of mortality; a very small circumscribed space compared with that which London now presents. These are their facts at page 109. In the four years preceding the vaccine practice in 1795, the deaths from small-pox were 1,040; the total burials from all causes being 21,179. In 1796 there were 3,548 deaths from small-pox; the total burials being 19,288. In 1797 there were 522 deaths from small-pox; the total burials being 17,014. In 1798, there were 2,237 deaths from small-pox, the total burials being 18,155. The total of deaths from small-pox in those four years preceding the vaccine practice, was 7,347; the total burials being 75,636.

710. *Chairman.*] Do those figures apply to the same area in every case?—Yes, the bills of mortality in London only; at that time they were furnished by the City. Taking four years during the vaccine practice, there having been 30,000 known vaccinations in 1799, the small-pox deaths were 1,111, the total burials being 18,134. In 1800 there were 2,409 small-pox deaths, and 23,068 deaths from all causes. In 1801 there were 1,461 small-pox deaths, the total mortality being 19,374. In 1802, 1,579 died from small-pox, the total burials being 19,379. Adding up those four years after the introduction of vaccination, the total deaths from small-pox were 6,560, and the total burials were 79,955. Hence we find that so far from the general mortality being lessened by vaccination the mortality increased by more than 4,000, while 787 fewer

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deaths occurred from small-pox. If it be a principle, therefore, that Parliamentary enactments should be passed for the greatest good of the greatest number, then most assuredly should this Committee be furnished with reliable evidence to guide them to a just conclusion, that legislation should never oppress or violate conscience without unexceptionable reasons to justify it. Such evidence it is my object to furnish. An Honourable Member of this Committee, when Dr. Collins was under examination the other day (I think it was the Honourable Member for Colchester), adverted to some statistics to be found in Dr. Seaton's Hand-book of Vaccination, page 252. In that book we find the periods compared: first, there is the first series, the average of 30 years previous to the introduction of vaccination, estimated by Dr. Lettson and Sir Gilbert Blane. The annual rate of deaths from small-pox per million of the population was then 3,000. In the second period an average of the three years 1838, 1839 and 1840, when vaccination had become to a great extent diffused, but before any public provision was made for its gratuitous performance, the annual deaths from small-pox in England and Wales were 11,944, the annual rate per million of the population being 770. The third period is an average of nine of the years from 1841 to 1853, when public vaccination was gratuitously provided, but vaccination was not obligatory. The number of deaths from small-pox in England and Wales was then 5,221, and the annual rate per million was 304. Then in the fourth period, an average of twelve years from 1854 to 1865, during which vaccination had been to a certain extent obligatory, the annual deaths by small-pox were 3,967, the annual rate per million of the population being 202 only. Now, if we analyze this table, in the first place we find an estimate is given without giving the number of deaths from small-pox, of 3,000 per million. The particular years for which that estimate is made are not stated. The value of the estimate is very suspicious too, when I find that in the Physicians' Report of the Vaccine Pock Institution, a complaint of Dr. Lettson's errors in stating the mortality from small-pox in 1684. I have personally asked Dr. Farr if the foregoing statement is reliable, and his answer was, "No reliance whatever can be placed on estimates of a century or two ago." So much for No. 1.

711. Was that an answer from Dr. Farr to yourself?—Yes, to myself, at Somerset House.

712. What was the question which you put to Dr. Farr?—Whether the estimate of 3,000 per million was to be relied upon, and whether there were any statistics that would enable such a conclusion to be arrived at; and Dr. Farr said emphatically, "No, it is a mere estimate; no statistics of the last century, or of the previous one, are to be relied upon."

713. *Lord Robert Montagu.*] Did Dr. Farr's estimate differ from the estimate which Dr. Seaton had given?—Dr. Farr made no estimate.

714. Has he formed no opinion as to the correctness of the estimate?—His opinion, as he gave it to me plainly, was that I was not to rely upon such statistics.

715. *Dr. Lyon Playfair.*] Dr. Farr himself has given as good estimates as he can from the imperfect data of the last century; did you ask Dr. Farr whether he considered his own estimates unreliable?—No, I did not refer to those;

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it is necessary to analyse these estimates, because if legislation is based upon such evidence, it is important to have it analysed. As to No. 2, the second period, only three years are put in comparison with 30 other years (which may have been selected to make an estimate), and in those three years, 1838, 1839, and 1840, the heaviest epidemic of small-pox occurred since 1825. I ask, why did not the compiler of that table include the years prior to 1838, and not make his selection of the three heaviest epidemic years in this century?

716. *Chairman.*] Are you aware that there was no register of deaths in England before 1837?—Precisely; that is the reason why Dr. Farr advised me to reject the 3,000 per million.

717. Would not that be a reason why they did not take the years before 1838 and 1840?—Yes. Let us now examine No. 3. Here we have nine selected years in contrast with the three quoted; the years 1843, 1844, 1845, and 1846 not being included, but in which an epidemic of small-pox occurred. While it is true that in those years no return of the causes of death in England were given by the Registrar General (a regrettable circumstance), Dr. Seaton ought to know that the exclusion of one epidemic from the period given must make a very serious difference in the results. The epidemic was in 1844. As to the fourth period, a period of twelve years is given, which includes only the short epidemic of 1858 and the epidemic of 1864-65; while in No. 3, a period of nine years, the epidemics of 1848 and of 1851-52 are included, but the epidemic of 1844 is excluded, owing to there being no returns. The whole statistics, thus bracketed together to serve a purpose, namely, to justify compulsory vaccination Acts, are fallacious, and ought to be expunged now that they are exposed.

718. But how do you prove that they are fallacious?—I will point that out. The Epidemiological Society published in its Transactions a Table, showing the annual mortality from small-pox in England in these periods. The periods are similar to those included in the former Table—the three epidemic years in the first, and then the nine years, and then eight years following that. This is the Epidemiological Society's Return, and this Table was compiled for the purpose of showing that legislative measures to provide and enforce vaccination have been effective in diminishing the mortality from small-pox. The epidemic of the years 1838, 1839, and 1840 was the most fatal from small-pox in the present century. The Table commences with the year 1838 while former years are omitted in which the death-rate from small-pox was low, for it had not prevailed severely since 1825. Hence the average mortality has swelled to 11,944 for those three years. The third division is supposed to prove that the decrease of the mortality from small-pox is due to compulsory vaccination. It must be remembered however that in the second division there are three epidemic visitations included, while in the third division there is only one; moreover if the deaths for the years 1862, 1863, 1864, and 1865 be added (which I have added in the fourth column), the average annual deaths for the period from 1862 to 1865 amount to 5,421, showing a greater mortality than the previous column, although the lessened mortality was then attributed to the enactment of the vaccination laws.

719. *Dr. Lyon Playfair.*] Will you give the

mortality for as many years as you can in the last division also?—There are no official returns published since 1867. The annual report of the Registrar General is not yet issued.

720. *Chairman.*] Can you give anything beyond 1865?—In 1866 it was 3,029, and in 1867 it was 2,513.

721. *Dr. Lyon Playfair.*] Will you give us the average?—We ought to go to 1871 to get eight years, but taking what I have, 4,541 would be the average up to 1867 for six years.

722. *Chairman.*] Can you give us any later return than 1867?—No, I am not prepared with that; there has been no epidemic until the end of 1870; about every six years we have a severe epidemic. At page 253 of Dr. Seaton's Hand Book, which was quoted from by the Honourable Member for Colchester the other day (and I have had some conversation with the Honourable Member since and called his attention to it), Dr. Seaton says, "Small-pox which in England 30 years ago was in one of its years of epidemic prevalence the fifth most fatal disease, has in the worst epidemic of the last 12 years occupied no higher than the 18th place among the causes of death as arranged by the Registrar General." Is it fair to draw a comparison between the great epidemic of 1838 to the exclusion of preceding years, and the slighter epidemics which have occurred since? Let us to the Registrar General's Returns for accuracy; in the year 1838 when small-pox was the fifth most fatal disease, the death rate to 100 living was 2.224; in the year 1864, when small-pox was in the 18th place in the list of fatal diseases the death rate to 100 living was 2.389. It had increased, demonstrating beyond all cavil the rule which I have endeavoured to elucidate, that when small-pox is present, the death rate is low; when it is absent, the death rate is high. I have no doubt that the mortality of the present year, unless some other serious epidemic should displace small-pox, will be as much below the average of 10 years as in 1869-70 it was above the average, when scarlatina was the prevailing epidemic. My reason for venturing this opinion is, that in 1838 when small-pox presented such a frightful mortality, the general mortality was 17,000 less than in 1840, when scarlatina took the place of small-pox, while the total mortality of the four allied diseases, small-pox, measles, scarlatina, and whooping-cough, was 8,000 less in 1838, small-pox being prevalent, than in 1840 when scarlatina prevailed. That is one of the most important bearings of the subject.

723. *Chairman.*] Are you aware that the number of deaths from small-pox in the year 1868 was 2,052?—I have no reason to dispute that; I have no doubt that is so; 4,183 is the mean for the seven years ending in 1868; that is the last we have. I have now to bring before your notice a table, extracted from one of my own lectures, illustrating the law of vicarious mortality, at which I have hitherto but hinted, but upon which I shall take the opportunity of enlarging hereafter. It is a table showing that in 1838, in which small-pox was fatal in 16,000 cases, the general mortality was 17,000 less than in 1840, when scarlatina took the place of small-pox. The deaths from all causes are much less during an epidemic of small-pox than during its absence. That is a law which I have established. The whole mortality is much less in 1838, when small-

small-pox prevailed, than in 1840, when scarlatina was substituted for it.

724. What was the total mortality in the year 1838?—Thirty-seven thousand six hundred and ninety-one.

725. What was the total mortality in the year 1840?—45,708.

726. How was that mortality distributed?—Scarlatina here claims 19,816 in one year, 1840, as against 5,802 in the other, 1838. When small-pox is depressed, then scarlatina rises by the law of interchange. Turning to page 161 of Mr. Simon's Paper on Vaccination, we find a Report of the Faculty of Medicine at Prague, confirming, yea establishing, as regards Bohemia, the proposition which I have demonstrated, namely, that the proportion of deaths to the population was about the same before the introduction of vaccination as subsequently to that date. There is no saving of life by vaccination. In the seven years from 1796 to 1802, the average number of deaths from small-pox in Prague was 7,633 per annum. In the 24 years subsequent to the introduction of vaccination, namely, from 1832 to 1855, the average number of deaths from small-pox annually was only 287; the proportion of deaths from small-pox out of the population therefore was in the first period 1 in 396, and in the second period only 1 in 14,741, an amazing diminution of mortality apparently. Hence, at first sight an immense saving of life was apparent, sufficient "to appal the anti-vaccinationists, and make them for ever after hold their peace." But if we examine further in the way which I have indicated, and take the general mortality, the following is the result: In the first period prior to vaccination the whole mortality to the population was in the proportion of 1 to 32, and in the second period it was 1 to 32½; so that before vaccination when small-pox killed 1 in 396, the whole mortality was no heavier than after vaccination when it only killed 1 in 14,741. Dr. Ballard, who wrote an essay on vaccination, has given a condensation of the Prague statistics similar to mine.

727. Can you state how the vaccination was carried on in that country?—I cannot.

728. Do you know whether it was compulsory, or whether it was carried out successfully?—It was compulsory, and I should say it was pretty successfully carried out, judging from the Tables in Mr. Simon's papers and the number of vaccinations. I shall come presently to a better vaccinated country, namely, Sweden. It is evident from these statistics that vaccination has effected no saving of life. Sweden having been frequently alluded to as "that well vaccinated country," it is interesting to examine the mortality of that country to ascertain whether the death rate is lower than in England and Wales, that "badly vaccinated country." But before discussing the general death rate, let us see what value is to be attached to the very stringent compulsory law in that country where everyone is vaccinated, where, as in Bavaria, even a couple desiring to be made a pair in wedlock cannot be legally united without a certificate of their having been vaccinated. That which is constantly being said of Ireland, namely, that small-pox has been stamped out by vaccination, was said a few years ago of Sweden. It was thought remarkable, and was attributed to vaccination, that in the five years from 1843 to 1847 inclusive, only 36 deaths occurred from small-pox. Great stress has been laid upon the instance of Sweden by all the advocates of

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vaccination. The fact is that no small-pox epidemic occurred within that period; when, however, an epidemic visitation did occur, what was the result? Why, that in the three years 1850, 1851, and 1852, no fewer than 5,398 died of small-pox, all of whom had been vaccinated. I have extracted from a Table, which I have before me, of the Swedish statistics, which show the mortality from small-pox in 32 years.

729. Dr. *Brewer*.] Have you taken the years from 1810 to 1850, when we have only 158 deaths from small-pox in Sweden?—That is an error, I think.

730. Are you aware that that is the statement of the American Commission?—I would rather believe Mr. Simon's papers, because they are sent direct by the Swedish Government.

731. Dr. *Lyon Playfair*.] In the table from which this extract has been made, have we not the small-pox deaths from the year 1749 to the year 1843, which have been quoted, and in all those years is there not a very large number of deaths from small-pox, although they were epidemic and non-epidemic years, while these are only four years taken out of a very large table?—I do not exclude those results; I would beg to remark that when small-pox epidemic was absent from Sweden, it was said then as it has been said of Ireland recently, that vaccination had stamped out small-pox, and I appealed to those figures to show that prior to and after that date, the mortality from small-pox was heavy; I have not singled out those years; I have given 32 years.

732. *Chairman*.] Can you give us any statistics with respect to Sweden, as to the mortality before vaccination was made compulsory in that country in 1803?—Yes; in Mr. Simon's papers we have the mortality from small-pox and measles mixed, and not separately given in the official accounts from 1749 to 1773.

733. When were they separated?—They were separated in 1774, and from that time small-pox was given only without measles.

734. Will you give the figures for the first year when you have small-pox by itself?—In the first year, 1774, the deaths from small-pox were 2,065; in 1775, they were 1,275; in 1776, they were 1,503; in 1777, they were 1,943, and so on; the numbers through the whole of the years down to 1855 are given, so that we find in some years a smaller mortality in the last century than even in this century with vaccination.

735. Mr. *Jacob Bright*.] Are you aware that in Sweden in recent years there were only nine or six deaths, and that in one year only two died of small-pox?—After that the epidemic came to Sweden again.

736. In a non-epidemic period, previous to vaccination, were there ever so few deaths from small-pox as we have here?—No.

737. *Chairman*.] Can you state what is the system of vaccination in Sweden?—Not as to details; only that it is compulsory, and has been compulsory ever since 1803 or 1804, and that we have Mr. Simon's testimony that it is the best vaccinated country in Europe.

738. Do you know whether it is made compulsory at an early age, or whether it is commenced at a later age?—It commences to be compulsory at an early age, not so early as here, but I think it is within two years; here it is within three months, as a rule.

739. Do you know that those 5,398 deaths from

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from small-pox, from 1850 to 1852, all occurred with vaccinated persons?—It is said so.

740. Where is it said so?—It is said at least to have occurred in a well-vaccinated country, where the law is exceedingly stringent, and where no person can hold office, or even get married, as I said just now, without a certificate of vaccination, as in Bavaria.

741. But would it not be a very dangerous argument to use, that those deaths occurred in a well-vaccinated country, when you have children under two years of age as to whom there is no compulsion with respect to vaccination; and might not the deaths have occurred at a very early age?—I have a list of the ages at which the deaths occurred in Sweden.

742. With respect to Sweden, do you know whether there is any system of re-vaccination?—I do not.

743. Mr. Muntz.] With regard to those statistics, what do you call Sweden?—Do you include Norway?—No, it is exclusive of Norway.

744. Do you include Finland?—It excepts Finland.

745. Chairman.] You have some statistics of the ages at which the deaths took place in Sweden; will you give those statistics?—In the 30th Annual Report of the Registrar General, at page 243, we have, in Table 22, the relative mortality of men and women, at different ages, in England in the years 1851 to 1860, in the 64 healthy districts in England in the years 1849 to 1853, and in Sweden in the years of 1830 to 1835, and in this Table the ages are given as follows: the annual mortality from all causes to 1,000 living (which is better than the actual number of deaths), for ages from 15 to 25, in England was 7·68; in Sweden it was 6·55, showing that among *young* lives the mortality was less in Sweden. From 25 to 35, in England it was 9·55; in Sweden it was 11·50. From 35 to 45, in England it was 12·6; in Sweden it was 16·45. From the ages of 45 to 55, in England it was 17·59; in Sweden it was 25·0. From 55 to 65, in England it was 30·35; in Sweden it was 40·28. From 65 to 75, the mortality was 66·82 in England, and in Sweden it was 78·26.

746. Have you no statistics with reference to the younger ages?—No; they are not given under 15 years of age, and that is a great misfortune; I request attention to this Table of Dr. Farr's, because I think it demonstrates that, to 1,000 living, the ratio of deaths is, especially after 30 years of age, vastly greater in Sweden than in England, and that exclusively in young lives is there an advantage in favour of Sweden. Taking the deaths from 35 to 55 in England, the death-rate to 1,000 living is 15·10, while in Sweden it is 20·72. Taking the average of the six divisions of life in the Table, in England the death-rate is 24·10, according to Dr. Farr, and in Sweden it is 29·67. What advantage is there, then, in vaccination? In no country, so far as I am aware, is the law of vicarious mortality (upon which I have as yet only touched) more manifestly operative than in Sweden.

747. Are you aware whether re-vaccination is carried out in that country or not?—I believe it is, but I will not speak positively.

748. Dr. Brewer.] The question which I thought was before us was a relative question with regard to the amount of small-pox before vaccination and after vaccination in Sweden.

The two questions were distinctly thus: How many persons in each million of the population died annually of small-pox before the use of vaccination; how many persons in each million of the population have annually died of small-pox since the use of vaccination, taking large numbers of years? During the early period there used to die of small-pox out of each million of the Swedish population 2,050 annually; during the later period the small-pox deaths had annually averaged 158; are you acquainted with those statistics?—In reply to that, I would say that I have no reason to dispute the figures; but what I maintain is, that small-pox forms no exception to the mortality from all diseases which were more fatal in the last century than in the present one; but what I affirm is, that with that difference of mortality from small-pox *per se*, there has been no saving of life, but that other diseases have taken the place of small-pox.

749. Chairman.] But you do not dispute the Honourable Member's account?—No, I do not dispute that the plague used to carry off thousands of victims in London. The incompleteness of nearly all the statistics contained in Mr. Simon's papers, excepting those from Prague (I allude here to the absence of the whole mortality and causes of death from other diseases, I do not attribute this to Mr. Simon), renders it impracticable to deduce from foreign sources an exact statement of relative mortality. From Sweden, however, we can derive some information which will serve the purpose of illustrating the law of displacement, or substitution of one disease for another. Let us take the relation of small-pox to typhus in Sweden: in the year 1825 there died of small-pox in Sweden 1,243, and of typhus 3,962. In the year 1829, four years afterwards, when the epidemic of small-pox had subsided, only 53 died of small-pox, but the deaths from typhus went up from 3,962 to 9,264, from the law of displacement.

750. Dr. Lyon Playfair.] You have given two years; but in the year 1784 the number of deaths from small-pox was 12,453, and the number of cases of typhus was 6,494; if you go down from that year to the year you named, you will find 20 arguments for you and 20 arguments against you; why do you not take a number of years rather than select only one or two?—I will take a number of years, if you please: in 1789, when small-pox diminished to 7,064, then typhus went up to 14,226; the same in the following year; you have an epidemic of typhus for two years. One more illustration from Sweden: the following table shows that when small-pox was in abeyance the general mortality was high, and when small-pox was at its highest mortality the general mortality was low. The relations of small-pox to general mortality in Sweden, in 1829, were that only 53 died of small-pox, and there died of all causes 82,719. Four years afterwards, when the epidemic returned, 1,145 died of small-pox, and the deaths from all causes were diminished by nearly 20,000, to 63,947. Now go to 1846, a year in which the mortality from small-pox was only two, and when it was said to have been stamped out; the deaths from all causes were in that year 72,683. Then in 1851, when the epidemic returned (as it will to Ireland, and has already in fact) 2,488 died of small-pox, and the deaths from all causes were 72,506, less actually, and in a larger population, than in 1846, when small-pox was absent. Coming back to England, I might

I might illustrate this remarkable law of displacement in a thousand ways; even in cholera epidemics there does not appear a loss of life; it is a remarkable fact, which I pointed out to Dr. Farr the other day, that in the cholera epidemic of 1866-67 the deaths from cholera in England and Wales were 15,300, and from diarrhoea 37,031, being a total of 52,331; the mortality from all causes in the years 1864 and 1865 was 986,440, while the deaths from all causes in the cholera year were 971,762, being a mortality on the whole population of 14,618 less when cholera epidemic prevailed than without cholera. On pointing out this result to Dr. Farr, he remarked that frequently after a great epidemic the mortality was greatly less, the epidemic having killed off so many that there were fewer left for mortality to feed upon; but it so happens that I have taken the two previous years to the cholera epidemic to show this vicarious mortality. During the plague in London from 1604 to 1611 (I have looked at the Bills of Mortality) there died of plague 14,752, and the deaths from all causes were 64,994; taking the next following years, from 1612 to 1619, the deaths from plague fell from 14,752 to 171, and the whole mortality was 64,517; in other words, when the plague killed nearly 15,000 persons the whole mortality was only increased by 477, a striking confirmation of the observations of Thucydides, the Greek historian, who says that "during the plague at Athens other diseases declined, and besides this none of those diseases to which they were accustomed affected them at that time, or whatever there was ended in this." My next and concluding proposition will be, that the practice of vaccination is fraught with danger to health and life, and ought not to be enforced by Parliament.

751. You allege that the practice of vaccination is fraught with danger to health and life; how do you prove that?—In my extensive practice, among a population of 35,000 people, in Northampton, I believe there were 6,000 of the working classes shoemakers among them. I, as part of my duties, was called upon frequently to perform the operation of vaccination, which I did, being a full believer in its efficacy as I had been taught. Many cases came under my notice in which, after I had performed the operation, certain symptoms, which led me to inquire into the health of the parents, presented themselves, and I was astonished to find that I had unwittingly transferred syphilis (which I may say is a very common disease among the population there) in the vaccine lymph. I could scarcely think it possible with my then existing notions of vaccination, because I had been led to believe that it was impossible, in a proper vesicle, to transfer anything else than vaccine lymph. But this theory, I think, has been sufficiently exploded by other observers, and among them by Dr. Ballard, who wrote an Essay on Vaccination, and who is the medical officer of health for Islington.

752. Will you give the Committee any particular cases which have occurred within your practice, before quoting anyone in support of your view?—It puzzled me so much that I was led to extraordinary care in selecting the lymph, and I have frequently refused to fulfil the request of mothers to vaccinate from their neighbours' and relatives' children, suspecting that there was some impurity in the blood. I therefore got a supply of lymph from Mr. Badcock, who was then in

Brighton, and who is now in London, and who has taken great pains to get lymph by artificially inoculating heifers with small-pox, and then taking the lymph from those heifers, and passing it through two or three subjects, and distributing it to the profession. I confess that after I got that supply of lymph (and I must here not fail to notice that prior to my applying to Mr. Badcock, I got supplies of lymph from time to time from the Royal Jennerian Institution, the Cow-pox Institution in Finsbury, of which Dr. Epps was the president), I found that that lymph not only produced results which disappointed me as to its failures, but I believe that it contained impurities. I therefore rejected that lymph entirely, and from that time I got it from Mr. Badcock, and I must give Mr. Badcock the credit of saying that with his lymph I never saw a single mishap. In one case I vaccinated the son of a gentleman who came from Madras, who now lives in the Addison-road, Kensington, and who was a merchant in India, and I was rather surprised to find on the eighth day after vaccination not one vesicle, but from 40 to 50 distributed over his body as much like modified small-pox as anything I had ever seen. On mentioning that to Mr. Badcock, he said, "You wrote to me for lymph as near to the cow as I could supply it; I gave it you near to the cow, and that is the result: I do not recommend that it should be done; it should be more diluted."

753. Have any cases come under your own eye in your own practice, where syphilis has been transferred in the lymph?—I have proved, on examining the parents carefully, that no syphilis existed in those parents of children who showed signs of syphilis after I had vaccinated them.

754. How soon did the taint of syphilis show itself in those children?—At the time of the vesicle and the aureola on the eighth day to the tenth day it looked suspicious, and in some cases as late as 13 or 14 days afterwards.

755. In those cases had you any proof as to where the lymph was obtained?—None at all; some of it came from the Cow-pox Institution, Finsbury.

756. You had no proof that it had been even taken from the arm of a child?—No.

757. Without knowing how the lymph was obtained, does not your argument very much fall to the ground?—It is very difficult to ascertain the source of lymph in an institution where some hundreds are presented for vaccination, and where possibly 30, 40, 50, or perhaps even 100, a day come up, and it is taken indiscriminately; the medical officer merely judges from the external appearances and looks at the mother. I have sat there with Dr. Epps many days, and he takes the lymph according to his judgment, but he has not seen the father and examined him; but this I would say, that I could never distinguish from the appearance of the lymph itself, nor can any man distinguish the difference, between that which contains syphilitic matter and that which is purely vaccine lymph; I do not think that it is possible, or that the microscope would show it.

758. How many of such cases have come under your own knowledge?—I should think, speaking carefully, at least 20 to 24 cases occurred in the course of three or four years in Northampton. I must confess that it is a very impure place; and I was more likely to see it there, perhaps, than in most places. What it is in the

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northern manufacturing towns, I do not know ; but I can speak positively as to my unfortunately having transferred syphilis through the vaccine lymph to children.

759. Is there any other disease which you say is communicated by vaccination?—A question was asked the other day as to whether there was any disease *per se* which would be induced by vaccination. My answer to that would be that erysipelas would be so induced.

760. Have you any other example to mention?—No. If other authorities were suffered to be quoted I could adduce such authorities here, but I did not come prepared for that to-day.

761. I suppose that you are aware that in the replies sent in by 540 medical practitioners in various parts of the world, it appears that only two or three said that they at all thought that syphilis might be transferred by vaccination?—I have read through those answers, and a great deal might be said about the value which should be attached to such evidence. I look down the list, and I find the names of surgeons of hospitals who, perhaps, have never vaccinated in their lives, who have never been in general practice, and who know very little of the ordinary ailments of life. In fact, one very eminent surgeon whom I could mention, at the west end of London, was called to a case of measles three years ago, and did not know what it was, for his practice had been confined to hospital practice from his youth, and he was an operating hospital surgeon. I put down the answers from such men as of no value at all upon this subject.

762. But you would not take an extreme case of that kind and say that it would apply to any large number out of the 540, would you?—No, I would not suspect their motives ; but there is such a thing as a man saying that he does not see what he does not want to see ; and on analysing some of these, as I should like to be permitted to do on a future opportunity, I was greatly dis-

appointed at finding that the answers were so evasive. It would have been far better if every medical practitioner had received those general questions, and not that they should have been sent to the eminent men in the profession, whose opinion, in my estimation, goes for nothing. I am sorry to say that gentlemen now, who studied with me, who have not had the fortune to be engaged in extensive country practice, as I have, really could not distinguish, when taken to the bedside, scarlatina from measles, or measles from anything else, scarcely. So it is ; this class of practice is not seen at hospitals.

763. You do not mean this, of course, to apply to the medical profession generally, but only to some of your acquaintances?—No ; I mean it to apply to some of those men who have never been in general practice. Hospital surgeons, intimate friends of mine, who have come from college to the hospital, and have never seen the ordinary ailments of childhood. The old women in the country know better about such complaints, and doctors who go into the country often ask the old women what is coming. “Well, madam, what do you think this is? Is this measles or scarlatina?” It may be either one or the other. I would call the attention of the Committee to the reply of Mr. Whitehead, of Manchester, who says here, “I have seen several instances of the transference of the syphilitic taint through the medium of vaccination, the lymph having been taken from a true Jennerian vesicle, or one which was presumed to be so, at least, in a tainted infant ; and I have known eczematous eruptions, apparently of a simple nature, in this way reproduced.”

764. He is one of the three quoted by Dr. Collins, is he not?—Yes ; still I think that where positive evidence comes, it should be put against negative evidence. A man says, “I have never seen it,” but many of them have not had an opportunity of seeing it.

SIR JERVOISE CLARKE JERVOISE, Bart., called in ; and Examined.

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765. *Chairman.*] You were Member for South Hants from 1857 to 1868, were you not?—I was.

766. Are you a magistrate for the county of Southampton?—Yes ; I have been a magistrate I think from the year 1835 to the present moment.

767. And you have attended regularly at the Petty Sessions and at the Board of Guardians, have you not?—Yes, but not so regularly at Quarter Sessions.

768. When did you discontinue to act as magistrate?—I think it was at the Michaelmas or Epiphany Sessions of 1868.

769. Had you some particular reasons for discontinuing to act in the capacity of a magistrate and guardian?—Yes ; I gave notice of a motion at the Quarter Sessions, and I announced my intention of no longer acting in a magisterial capacity.

770. What was your reason for so doing?—The reason that I gave was, that I was a disbeliever altogether in the theory of infection.

771. Were those the grounds of your discontinuing to act?—Yes ; and that as it would be a magistrates duty to enforce the cattle plague laws and the Privy Council Orders on the cattle plague ; and as the compulsory vaccination was coming on, on the 1st of January in the following year, I said I could not conscientiously enforce

those laws, and I wished to resign the magistracy altogether ; but I was told that once a magistrate I was always a magistrate, and so I have remained, but without acting.

772. Did you take some step in the House of Commons with respect to the question?—Yes, I did ; I moved a certain resolution praying for an inquiry into the distinction between infection and contagion. I think the noble Lord, the Member for Huntingdonshire, who now sits as judge, was the promoter at that time of the Compulsory Vaccination Bill.

773. That was in the year 1867, I think?—It was in the year 1867.

774. You called attention also in the House of Commons to the immunity of the nurses in attendance at the small-pox hospitals, did you not?—Yes ; I am not sure whether I might not have been almost the first to call attention to the subject. The medical officer of the Privy Council in one of his reports mentions the fact, and he adduces it as a proof of the efficacy of vaccination against infection, which he is pleased to call contagion, from which I venture to differ ; but I adduced it as a proof that small-pox was not infectious, or it would have affected them as it did so many of the patients who were in the hospital who had been previously vaccinated.

775. Did

775. Did you call the attention to the case of Emmanuel Cook also?—I did.

776. Was that a case of small-pox?—It was. Emmanuel Cook was a pauper, and he had been shut up in the pest-house in the contagious ward (which I should have called the infectious ward) of the Aylesbury Union, I think, from which he had escaped. He was under treatment for small-pox by Mr. Robert Ceely, the medical officer of the establishment. The man expressed a desire to go out and see his friends, which was not very unnatural, I think; but, however, it was considered right to keep him in close confinement. He escaped no less than twice, and alarmed the neighbouring villages very much from the terror which they had been taught to entertain as to the communicability of small-pox.

777. Was he labouring under small-pox at the time when he escaped?—Yes; he escaped twice, so that he tried the experiment twice over, and was brought up before the magistrates. Being a pauper, and having come out of the workhouse, he was fined 5s., and 12s. 6d. costs, and the Bench intimated their intention, on the recurrence of any similar case, to impose a much heavier penalty. Upon that, I founded a question to know whether the Home Secretary at the time had notice of this fact, and whether there had been any bad consequences from Emmanuel Cook's escapade; I gave the longest notice I could to Mr. Hardy, who was Home Secretary at the time. I think from the Friday to the Tuesday following, or something of that kind, and on the Tuesday following I asked the question. Mr. Hardy said that he had no answer to give me, because it took a long time as it was a Bench case, and the clerk of the Bench had not answered, or something of that kind. It was very disagreeable to me to have to put this question over again; but, however, I was prepared to do it. I am not quite certain whether I gave notice of the question over again, but Mr. Hardy came up to me in the washing-room of the House of Commons, and he said: "I have had an answer to your question; there was no harm done; Emmanuel Cook did no harm by his going out with the small-pox upon him." I could not say to Mr. Hardy that mine was a public question put in a public place, and that I should ask for a public answer, because it would have implied that I thought that he was getting out of the difficulty by his private answer, and I was obliged to accept it as an answer to my question, and no answer was therefore publicly given in the House of Commons.

778. Had the man gone into any person's house?—Cook had for some time been an inmate of the workhouse, and had expressed his desire to see his friends, and Mr. Ceely said he must not go out. Regardless of this veto, however, Cook managed to evade the observation of the parties in charge of the pest-house and escaped; proceeding while in that condition along the high road through several populous villages as far as Wingrave, where he incautiously called at people's houses, and as they were aware of his state set the whole population in a terrible fright.

779. So far as you know no injurious results took place?—Mr. Hardy's reply was that it was unattended with any evil consequences whatsoever.

780. You have paid attention to the subject of the supposed security from small-pox by vaccination.

tion, and you, I believe, have grounds for doubting its efficacy?—I have.

781. What are those grounds?—In the first place, I am not quite certain whether I am right or wrong in referring to the noble Lord the Member for Huntingdonshire's speech in the House of Commons, on the going into Committee on the Vaccination Bill, but his Lordship will recollect very well that he, by implication, charged those who were hostile to vaccination with murder. The 15th of June 1867 was the date of the Compulsory Vaccination Bill. At that time the Privy Council had, or ought to have had, the report of the Small-pox Hospital in their possession. I do not know whether his Lordship had it or not, but if he had, it seems an extraordinary charge to make even by implication, when the report of the Small-pox Hospital for 1866, which is a medical report, on which the case of the nurses' immunity was founded by me, makes this statement: They "request attention to the existence of an epidemic of small-pox which, judging from the facts supplied to us by the Small-pox Hospital, has, from the length of time it has continued, and in the number of persons attacked, very far exceeded every similar visitation within the memory of the present generation." That does not look as if vaccination at that time had been very effective. But afterwards it says: "2,069 patients were admitted into the Small-pox Hospital in the year 1866, and of these, 32 were suffering from various forms of disease, not small-pox." So there, again, we have evidence that these diseases were incommunicable. Of the 2,037 cases of small-pox, 425 occurred in unvaccinated persons, and 1,605 in persons who had been vaccinated.

782. Does it give the fatality amongst those persons?—I suppose it does afterwards; but this is the effect of vaccination in giving what is called security against small-pox; because the amount of mortality is a very poor criterion, in my estimation. You ought to see a man's rent-roll, and his banker's book, and so on, in order to see whether in his case small pox is likely to be attended with fatal results or not. And I may be permitted to remark that the fatality of small-pox in the last generation was not altogether due to the absence of vaccination; but it was very differently treated from what it is now, and we know that the general health has improved, and the character of disorders is not so serious as it used to be. "There were three cases occurring after a previous attack of natural small-pox." That is contrary to my own expectation, because I should have thought that one attack of disease ought, in a sort of way, to be a safeguard against its recurrence; but I take it again that there the main reason is, that a man never arrives at the same period of life again, and at every period of life there are certain diseases to which he is more or less subject. We know that the diseases of infancy are not likely to occur after puberty, and so on. Therefore I think that that may be a great reason. But there were three cases occurring after a previous attack of small-pox, two cases after inoculation, and two cases after vaccination and small-pox. "One of the three cases which occurred after natural small-pox died, as did also one of the two cases occurring after vaccination and small-pox." Here is a list of the different disorders in the unvaccinated: "From scarlatina, 1." That did not spread in the hospital. "In the vaccinated, from pyæmia,

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2; erysipelas, 1 (that is down in the Registrar General's report as what they call a contagious disease); gangrene, 1; hospital fever, 1; severe pelvic inflammation accompanying small-pox, 1; diarrhoea, 1; typhus accompanying small-pox, 1; disease of the heart, 1; and disease of the chest, 1." I did not obtain that report until after the discussion had come on; but the Committee will see by the date that it was or ought to have been in the possession of honourable Members, although I think the date of these publications is not always a criterion of when they are published, because I have myself asked in the House of Commons when the Medical Officer's Report would be published; he is bound to publish it by the 31st of March, and he generally returns it after Parliament has broken up, and Members have had enough of blue books.

783. You say that you do not believe in the effects of vaccination; I suppose you do not believe in the effects of re-vaccination?—Certainly not; but I will give additional reasons with regard to vaccination. I have two relations with whom I have lived on terms of the greatest intimacy, one of them has died and the other survives. They were vaccinated by Jenner himself; their father told me that they were in such a state that he did not know his own children.

784. In what way were they in such a state?—With confluent small-pox; it is something to have happened to an individual like myself, not in practice of any kind, to be connected with anybody who was vaccinated by Jenner, and to have those results follow, particularly when the people were in easy circumstances.

785. In that case which you have just mentioned did the confluent small-pox come immediately after vaccination, or did it come at some period afterwards?—I cannot tell you; if you wish for dates, I could, I have no doubt, obtain them, but it would be disagreeable to do so; they were vaccinated by Jenner, and you can judge that there could not have been a very great difference; of course, it was not immediately afterwards, but they were very young at the time; they were contemporaries of mine, or, perhaps, two or three years older than myself. I was born in 1804, and they might have been born, I should think, one, or both of them, within this century; I think one was born at the end of the last century; I know that for one case. With regard to re-vaccination, I know a child that was re-vaccinated; I knew it particularly well. There never was a cleaner-skinned child in this world than it was; it was a case of re-vaccination. Very often it is said, "Oh! there must have been something wrong to come out in that way;" this child was a mass of ulcers or abscesses, or whatever you choose to call it, from head to foot, and it was vaccinated from the healthiest child that could be obtained in the district.

786. What age was the child?—I should say about nine or ten, or something of the kind; it was vaccinated by the medical man of the district, who was acting for the squire of the district; and therefore spared no pains to get the best subject he could; but with that child it acted in that way; that is within my own knowledge and experience, and, perhaps, that is worth more than anything else I could say. I have asked questions in the House of Commons with regard to a recent outbreak of small-pox at Woolwich, and I think the Noble Lord answered

me on that occasion; and the answer was, that he took it that the number of deaths of persons who had the small-pox arose from imperfect vaccination in the first instance. His Lordship might take it for that, but that is not what I take it for. I think these are, most probably, soldiers who are vaccinated in regular form; and I could mention that recently the Scots Fusilier Guards, who were all re-vaccinated in regular form, had the small-pox very badly, and some deaths occurred, and because vaccination had signally failed with them, they vaccinated and re-vaccinated all the boys at Eton at that time.

787. To what time do you refer when the Scots Fusilier Guards were re-vaccinated?—I happened to have a grandson at Eton, and I had to pay 10 s. 6 d. for his vaccination; he had been vaccinated twice before, and they did not ask whether he had been vaccinated before, or whether he required it, but he ought to have been secure.

788. I suppose he has been secure so far?—Quite so; but I do not know that he would necessarily have caught it if he had not been vaccinated quite so often; it was before the Midsummer holidays the Scots Fusilier Guards were vaccinated.

789. What do you wish to prove with respect to the Scots Fusilier Guards?—That the re-vaccination of the Scots Fusilier Guards did not prevent their having the small-pox, because soldiers are all re-vaccinated, I believe.

790. Did those cases of small-pox occur after re-vaccination?—After re-vaccination; some of them were fatal, I believe.

791. Did the fatal cases occur before the re-vaccination, or after the re-vaccination?—I think they are re-vaccinated when they join.

792. When were the Scots Fusilier Guards re-vaccinated?—They are not all re-vaccinated together; I suppose when a recruit joins he is probably re-vaccinated; I do not think the small-pox had become an epidemic at that time.

793. Do you wish to prove that those fatal cases occurred after the re-vaccination of the Fusilier Guards?—After vaccination or re-vaccination.

794. And in consequence of re-vaccination?—No, I do not say that.

795. You say that after being re-vaccinated they took small-pox, and some of them died?—Yes.

796. Do you know how many of them died?—I do not. I merely took the report from the papers; and I know that the boys at Eton were re-vaccinated in consequence, and that I consider circumstantial evidence,

797. Then you have not ascertained it as a matter of fact?—Certainly not.

798. That reference which you made to the Fusilier Guards is merely from what you saw in the newspaper, and you do not give it from your own knowledge, or from any inquiry you have made as to its truth?—No.

799. It may, or may not, be true?—It can hardly fail to be true; it is not a piece of *on dit*; I could, of course, have come with evidence to that effect. I have a letter here from a relation of mine, who is down at Brighton, and he dates his letter March the 1st. He says, "I find a friend here with his left hand all over black stains; he had been done (that is vaccinated), and had erysipelas, and been cauterised, and now considers he is safe for life; at least, he says he will

will never be done again." Well, I have no doubt he is safe for life. Referring to the Registrar General's reports, probably many of the Committee will have noticed that he gives the result of vaccination at different periods of life; and he says that so many die (without giving you the numbers) at an early age; so many before 20, and so many after 20, and fewer beyond the age of 40, and he deduces from that the fact that the security of vaccination does not wear out because there are fewer who die at a later period of life. If I may be allowed to make that argument hop on the other leg, as they say, it appears to me that the nearer you are to the process of vaccination, the more fatal the results of small-pox are.

800. Do you mean that also to apply to re-vaccination?—Re-vaccination must take place at a later period of life. He gives the proportion, but I beg pardon for saying that I am not talking of re-vaccination. I understood that the question was as to the efficiency of what is called Jenner's security against small-pox. In the present epidemic I think one may be allowed to say *Si monumentum quaeris, circumspice*, and see what the security has been.

801. You say that you formerly believed in the beneficial effects of vaccination; why have you changed your opinion, and are now opposed to compulsion?—I did believe in it. I thought it impossible but that it must have some effect, upon the principle that *similia similibus curantur*: that it either occupied a place in the system, or it caused some fermentation in the blood, and so on, that would make the person less susceptible of the same disease.

802. But is it not the fact that there are fewer fatal cases now from small-pox than there were in former years?—It is quite true, but then the whole system of life is changed; and, as I say, the treatment of small-pox is changed altogether. Moreover, small-pox might very well have disappeared about Jenner's time, as it has periods of disappearance now. There is no reason in the world why there should not have been that coincidence. But I will give a stronger reason why it should have been a coincidence. Jenner's cow-pox has disappeared from the country, so to say, and simultaneously the small-pox which he was supposed to prevent by it. As for compulsory vaccination, I have looked upon it in this light, that you have no right to interfere with the liberties of another unless those liberties are injurious to the country at large; and then I think you ought to prove that small-pox is communicable (it is not for us to disprove it), and that vaccination will prevent small-pox from being communicated. I ask permission to read these two letters of my own which appeared in a newspaper, although I do not set them before the Committee as an example of style. The first is dated June 1867, "To the Editor of the Pall Mall Gazette. Vaccination. Sir,—I am confident you will be glad to correct an error in the Parliamentary Intelligence (Vaccination Bill) of your paper of the 15th. It is there stated 'Mr. Barrow and Sir J. Jervoise raised a protest against vaccination altogether, on the strength of statements which Mr. Bruce could not help calling idle gossip.' I addressed the House on a motion for further information, and reminded the House that it was Jenner's observation in arm-to-arm vaccination, putrid and not vaccine matter was constantly inserted; moreover, that the

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Cattle Plague Commissioners had demonstrated vaccinia and rinderpest to be similar, if not identical disorders." (That, I beg leave to observe, is where I think Jenner's cow-pox disappeared, and how it has reappeared.) "The insertion of such animal matter by compulsory legislation within three months of the infant's birth in the height of summer, when every Londoner knows how rapidly his cream 'turns,' was entitled to the most ample and most recent information. I had always considered vaccination a palliative, and not a remedy, for small-pox; and that (on this subject) the book of science was not closed. It could not be intended to apply the term 'idle gossip' to these remarks, nor can it be said that I objected to vaccination altogether." That was the first letter. Then there was a second one in the following year, 1868, on compulsory vaccination: "Sir, I find in your article, 'House of Commons,' yesterday, you have again been misled by me into the assertion that I denounced vaccination as cruel and useless. In spite of the repugnance that some persons may feel against inserting into the arms of children of the tenderest age a disorder identical with rinderpest, and, in hot weather, matter in a state of putrefaction, besides other virus; notwithstanding that vaccination is no security against small-pox, the report of the hospital, 1867, informing us that 81 per cent. (I speak from memory) of the patients have been vaccinated, and recent cases demonstrating that the most elevated ranks are not exempted" (I heard some evidence the day before yesterday, although that is newspaper evidence again, that persons in office and in high rank have had the small-pox, and that in one case it came from Scotland); "and notwithstanding the fact that for 30 years there has been no instance of the spread of the disease amongst the attendants at the Small-pox Hospital, proving that it is not very highly communicable, I have only opposed compulsory vaccination. To make it compulsory within three months of the birth of the child, when the struggle for life is keenest, under penalty of fine and imprisonment to the mother for non-compliance, in the height of summer or the depth of winter, is, in my opinion, cruel and useless." It ought, perhaps, to be "the parent" instead of "the mother;" but in the well-known case of Maria Sepple, she unfortunately was a mother and a parent, and incurred the blame herself; and, as is well-known, she was fined and imprisoned, and came out again very soon. From what I see constantly occurring, without bringing the details before the Committee, all the cases that are constantly reported at the police offices are for what they call breaking the law, and incurring the danger of communicating what they call contagious disease.

803. Then I understand you to object, not to vaccination itself, but to compulsory vaccination?—I object now to both. If you choose to do it, perhaps that cannot be prevented, but I object to compulsory vaccination; and if compulsion was removed, I do not think much vaccination would go on with the very small advantages that seem to have been derived from it.

804. You say you are astonished that the effect of vaccination should be so trifling for good or for evil; how can you say that, if you look at the mortality amongst the vaccinated and the unvaccinated cases?—I just now said that I think that is a very unfair criterion, unless you can see the banking book of those attacked. I

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think the chances are that you would find that those who perished in the greatest number were those in the greatest distress; and you would probably also find that they are the most neglected class, who even if they believed in vaccination could not afford time or money to go through the operation: that is why I say so.

805. Do you make any difference as to the effect in the towns and in the country districts?—I am not versed in that question; I have not studied it at all; but I should think the chances were that any disease would be more severe that prevailed at a period when the food, and a thousand things of that sort, would be more likely to be unwholesome in a town than they would in the country. There are a great many cases in the country that I know in my own neighbourhood, but of course in a town, disease generally makes itself more perceived than elsewhere; this is what I have shown before now in the House of Commons. I produce the plate (*producing a coloured picture*), representing Mr. Hancock's hand as it appeared after he had wounded himself in dissecting a beast which died of the cattle plague, and that was my reason for saying that it was rather frightful for a mother, within three months of the child's birth, when the struggle for life is at its most critical point, that she should have to submit her child to the introduction of cattle plague into its veins.

806. Have you any other remark that you wish to make to the Committee?—I do not know that I have, except upon the main question of the communicability of disease; I have had some little experience in the country in these disorders of animals, both from acting (as I have done) as a magistrate to a recent time, and in cases of what, as I say, are termed contagious diseases, but which as a term I cannot admit to be correct; I think that still the day must come, and it ought to have arrived already, when the distinction between infection and contagion shall be clearly marked; for it is ludicrous to see what I could show you here; that one person is fined for being in a carriage having a contagious disease upon him, and the next, a lodging-house keeper, is punished for harbouring women having contagious disease upon them. To say that both those cases are similar, is what is called science, but I dispute altogether the scientific knowledge of the physicians; it is a different thing with surgery, but medicine is not a science, and they do not seem to be able to express what they want in scientific terms; science, I believe, according to Dr. Johnson's definition, is knowledge founded upon facts, and facts, he says, are realities, not suppositions. Now, a great many of these are not facts at all, and therefore they are not science; what supported me very much in my views was a book which I read some years ago by Professor Liebig, translated by the honourable Member for the University of Edinburgh, I believe; and unless all those theories are altogether upset, I think I am entitled to entertain the opinion I do entertain, as to the non-infectious nature of small-pox. There are a hundred authorities that I could quote, and if I were to quote them, their names would be legion; I could go into the health of the navy; there is not a ship or a station, where they have not small-pox after vaccination; I have here a rough statement of that.

807. In saying that they have small pox after vaccination, do you mean that it is induced by

vaccination, or that they are liable to small-pox after vaccination?—I believe the correct term would be "post-vaccinal small-pox;" they have been re-vaccinated; I have extracts as to the health of the navy at all stations.

808. Lord R. Montagu.] You produced just now a picture of Dr. Hancock's hand, in the Report of the Cattle Plague Commissioners; what did you produce it to prove?—To prove that the cattle plague was vaccinia.

809. How do you think that it proves that?—This is my own extract from the book. Mr. Robert Ceely, of Aylesbury, and others, could not detect any difference between cow-pox and rinderpest in Mr. Hancock's case. It is Dr. Murchison's evidence as to the pathological relations of the cattle plague to other diseases.

810. Does it amount to this: that Mr. Robert Ceely supposed that cow-pox and cattle plague were the same?—Yes; but this plate of the hand represents a case of what I thought was called vaccinia, although I may be wrong.

811. Are you aware that Mr. Robert Ceely failed to sustain that idea, that it broke down altogether, and was negatived by the whole Commission?—I was not aware of that. I see here that it says that "it certainly exhibits the appearance which I have often seen."

812. Are you aware whether Mr. Robert Ceely gave up the notion himself on further inquiry?—No, I am not; but I should have thought even then that the mistake might have been in the correction as probably as in the first assertion.

813. The picture in itself does not prove much, I suppose?—I am not acquainted with the technical question.

814. You said that you once believed in vaccination, because you believed in the principle *similia similibus curantur*; is that so?—Yes, I did.

815. Did you cease to believe in vaccination because you ceased to believe in the homœopathic principle?—I hardly know how to answer that. I am not a homœopathist; but I think that there is a good deal of good sense in it, and homœopathy has been practiced by allopathists in part of their practice.

816. Did you cease to believe in vaccination because you ceased to believe in the principle that *similia similibus curantur*?—I do not know that I ever entertained it sufficiently.

817. Why did you cease to believe in vaccination?—Because of its failure to secure beneficial effects.

818. Because you have seen persons who have been recently vaccinated catching the small-pox, is that it?—Yes, that there has been no security against small-pox, and it has produced other disorders.

819. Had you taken pains to investigate whether the vaccination in those cases had been what is called successful vaccination or not?—If it does not produce any beneficial effect, it is not very successful.

820. You know what is termed successful vaccination, do you not?—Yes; where there are certain marks; in point of fact, Mr. Simon has more than once repeated that there is a very nice little sum divided amongst the successful operators, and I am to suppose that that means not the results, but that that he, the successful operator, is enabled when he has a child's arm to dig holes in, to produce an abscess upon it,

it, and that that is what he is rewarded for, and not for any benefit in the mitigation of suffering and disease.

821. You do not know the meaning of the term "successful vaccination" which is used in the Act, and is also used among medical men?—I think I do, that it produces a certain pustule.

822. Have you ascertained in the cases of persons who have taken the small-pox whether they had been successfully vaccinated?—I have just given you an instance of two persons who were vaccinated by Dr. Jenner himself, and I should have thought that that would have been sufficient.

823. How did you get that evidence?—They are relations of mine; I heard the father state himself that he did not know his own children.

824. Have you ascertained that those cases were cases of successful vaccination?—No; I ascertained that they were done by Jenner.

825. That does not prove that they were successful vaccinations, does it?—No.

826. I observe in that report of the Small-pox Hospital that the death rate among the unvaccinated patients was 35 per cent., and that the death rate among the vaccinated patients was only 6·76 per cent.; it appears, therefore, that the death rate among the vaccinated patients was very much less than among the unvaccinated; of those vaccinated patients some might have been vaccinated as much as 20 or 30 years before, and the effect might have gone off; is not that so?—I was going to offer in reply the evidence of the Registrar General.

827. But will you explain to me that fact in the report of the Small-pox Hospital which you have adduced in support of your evidence?—My answer is that all things are possible.

828. It appears then that the report which you have adduced in support of your evidence proves nothing in the world in favour of the case which you have set up, although it proves a great deal against it?—I think that is only your Lordship's statement; if the Committee will allow me to read this, I think it will be an answer as to the effects of vaccination going off. "The danger of dying from small-pox diminishes rapidly as age advances, which could not be the case if the effect of vaccination wore out with time."

829. The question which I asked you was this; whether the report of the Small-pox Hospital does not prove that a far less per-centage of vaccinated persons than of unvaccinated persons died from small-pox?—Certainly.

830. As to the vaccinated persons who die from small-pox, you do not know how long beforehand they had been vaccinated, do you?—No; then I have an explanation again on the subject of the vaccinated and unvaccinated; I think the class of unvaccinated persons are more likely to be among the uneducated and uncared for, and poor.

831. Can you tell the Committee what class of persons are admitted into that Small-pox Hospital?—I cannot.

832. Are they all poor persons, or are they at least persons in the same class of life?—I should think that the chances were that the worst cases were sent there.

833. But as we are only taking those persons who were in the Small-pox Hospital, and as they are all in the same class of life, your argument as to the banker's book would not apply, would it?—No.

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834. Mr. Cave.] What distinction do you draw between infection and contagion?—I should say that infection is the communication of disease at an appreciable distance, and contagion is a communication of disease at an inappreciable distance.

835. That is to say, that infection is by the neighbourhood?—I do not believe in its existence.

836. But that is the interpretation which you put upon the word, is it?—At an appreciable distance.

837. What do you call an appreciable distance?—I do not know how I could define it.

838. I only want to get exactly the meaning which you place upon the two words, infection and contagion?—An appreciable distance, I should have thought, was as good a definition as I could give. I cannot see how I can measure it, but I mean not exactly touching. The very word "contagion" itself means contact.

839. Contagion, supposing such a thing existed, is the communication of disease by contact, and infection by neighbourhood; is that your meaning?—I suppose so; by those mysterious protoplasms, or germs, none of which, however, are proved to exist.

840. Do you disbelieve both in contagion and in infection?—Certainly not; I do not mean to say that you cannot communicate small-pox by touch or handling.

841. You believe in contagion, but not in infection?—Just so. Medical practice every day would show that disease is not communicated at an appreciable distance. Even by contact medical men do not get those disorders.

842. I think, if I remember rightly, that you were always entirely opposed to quarantine when you were in the House?—Quite so; and this isolation and disinfection I do not believe in at all.

843. Do you think that such diseases as yellow fever and cholera, and scarlet fever, are communicable?—I do not; and that brings me to this point. I have here a report of the scarlet fever among children at Aldershot Camp; I brought the subject before the House of Commons. Here is a map of the way in which the fever attacked different parts of the camp, which had no topographical communication the one with the other. Dr. Barry's own statement here is, that he had an opportunity rarely occurring of attempting to trace the history of scarlet fever in its progress through a given population, and he says that he has not the slightest proof of its being communicated in any way. It is a very remarkable thing that this should have been presented to the House of Commons, and no notice whatever taken of it in the medical officers' report.

844. In the case of Emmanuel Cook which you mentioned, do you know whether in his visits he came in contact with people who had not been vaccinated?—I know no more about it than I have stated.

845. You do not believe that small-pox is communicable either by infection or contagion?—No, except by inoculation; I think the case of the nurses would prove that fact.

846. Therefore I need not ask you whether you think that the want of vaccination is dangerous to a person's neighbours as well as to himself?—Apparently, it is only with regard to small-pox that you have what you call this safeguard; and it seems curious that there should be only this one disorder that does not follow the

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rules and laws of nosology, or pathology, or whatever the term may be.

847. Dr. Brewer.] I think you deny the propriety of the term "medical science," because you say that it is not founded upon fact; is that so?—It is so.

848. I, perhaps, do not understand what you mean by the word "fact:" supposing that the evidence before the American Commission is taken from 49 different territories in Europe, extending over a period of above 100 years; that all of them bear precisely the same way, and are uniformly thus: before vaccination, 2,484 died; after vaccination, 340 died, within similar periods, extending over a large number of years; would you call those facts, or would you deny them to be facts?—I say that medicine is not a science, and I gave the definition from Johnson's Dictionary, that "science is knowledge, founded on facts," in support of my statement.

849. I am quite willing to take it that science is knowledge, founded on facts; but I want to know what you call facts; are those circumstances which I have stated, facts in your sense, or are they not facts?—I daresay they are true.

850. If those are facts, and we arrive at our conclusion, in consequence of those facts, that vaccination is a protection against small-pox, will you not say that that is science, and a scientific deduction?—I say that those are facts; but the deduction which you make from them does not at all follow from them.

851. But knowledge founded on facts is proved to be true by the facts produced, is it not?—Yes; but there are such things as coincidences.

852. Then, do you think that the fact of every country in Europe having given evidence in the same direction, extending over 100 years, is a coincidence?—No, I do not say that; I say that a great many of those cases are coincidences.

853. But I am now taking a very special point, namely, that when examined upon this identical question, every country in Europe gives facts of precisely the same character before the American Commission, and that all our scientific men give the same?—I should like to ask who the scientific men are.

854. Every man who has had to do with science as regards small-pox at all; well nigh every man who has had a hospital under his care; every man who has had a large number of small-pox patients under his care; take any evidence you please, anywhere, the proportion is as 17 to 47; then you say that rinderpest and vaccination-pox are one and the same disease, vaccinia?—The Report of the Royal Cattle Plague Commission is my only guide.

855. Are the diseases like, when the bodies are opened and the parties are examined, or are they like in symptoms, or is there any resemblance whatever?—I think you are speaking a little without book. I can answer the question by saying, that I believe from what I have read of this Report that they are alike, but if you ask me all the symptoms of the cattle-plague, which are all depicted in this book, there is not one of them that counts for anything in the last Report of Dr. Williams.

856. I very respectfully asked whether there was the slightest resemblance, either in the *post-mortem* examinations, in the symptoms, in the progress of the diseases, or in any single thing by which we are directed?—I have no experience as to that.

857. You say that you believe, that though the inoculation of one disease will not prevent another, *similia similibus curantur*; have you ever heard that cow-pox and small-pox are really one and the same thing, and that numerous experiments have gone to prove it, only that the small-pox passing through the cow is not so severe when transferred to the human subject as small-pox directly caught?—I should think it very likely, upon the principle of fermentation.

858. But if it should happen to be identically the same thing, so that a man communicates it to a cow, and the cow is capable of communicating a milder form of the same disease to a man, would you be prepared then to say that vaccination was useless?—I should think then that it was likely enough that small-pox and cow-pox were the same thing.

859. Would not vaccination then very much destroy the tendency to small-pox?—It would upon the principle of *similia similibus curantur*.

860. Mr. J. Bright.] Have you ever been a believer in the advantage of vaccination?—Yes.

861. When did you cease to believe in it?—When I began to think more about it.

862. How long was that?—I was vaccinated like other people, and received it as a tradition from my father, that it was a security, but when I found the number of failures; and heard and thought about that case of Jenner's vaccination, and saw the present outbreak, for instance, I began very much to doubt its efficacy.

863. Did you give up your belief in vaccination because you saw with your own eyes, and had knowledge in your own neighbourhood, of the failure of vaccination?—I began to think about this matter when I read Liebig's work "On Fermentation, Putrefaction, and Decay," translated by the honourable Member for the University of Edinburgh.

864. Dr. Lyon Playfair.] I think, from what you have stated, you attach far more importance to a well-ascertained fact than to theory?—Yes.

865. You have stated that you knew of instances, or have heard of instances, where a second attack of small-pox came after small-pox, have you not?—I think I quoted the report of the Small-Pox Hospital.

866. This might be called, as you called some other things, post-vaccinal small-pox; you admit that there are such things as post-small-pox small-pox?—Quite so.

867. You quoted one instance, which you said you knew of your own knowledge, where a person vaccinated by Dr. Jenner had small-pox; is that more surprising than the cases to which you alluded, in which people, after they had had small-pox, again had small-pox?—I think not.

868. Then would you, from that single instance, or from a number of such instances, deduce the argument that if there was a general protection, exceptional non-protection was sufficient to take away the advantages of the general protection; and what importance do you attach to that specific case of the child of your friend which you do not attach to the cases which you mentioned of the persons who have had small-pox afterwards getting small-pox?—I attach great importance to the cases vaccinated by Dr. Jenner, as having been done by Dr. Jenner's own hand.

869. Is there anything more extraordinary in those two cases or half a dozen cases of persons vaccinated by Dr. Jenner having afterwards received small-pox than there would be in the cases of

of persons naturally attacked by small-pox getting it a second time, and is post-vaccinal small-pox more extraordinary than post small-pox small-pox?—No; I should have thought that post-vaccinal small-pox was less extraordinary than post small-pox small-pox.

870. Then what great importance do you attach to those cases?—Their failure.

871. But are there not cases of small-pox not protecting men from small-pox?—There are.

872. Is it surprising that there are cases of vaccination acting in the same way?—No.

873. I want to know exactly how much you know of those cases as facts; how long was it after Dr. Jenner vaccinated the child that the child had small-pox; was it years, or months, or what was it?—I cannot tell you; I should say that it was in early youth; that is all I can say. I can merely judge by the age of the parties and the date of Dr. Jenner's operation.

874. Then will you give us the exact information which you have as to that child who suffered from ulcers after being re-vaccinated?—That followed almost immediately.

875. Did you know the case personally?—Yes.

876. You saw the child?—Yes, I saw the child.

877. Was it immediately after the re-vaccination that it happened, or when?—It was within a few days afterwards; it was immediately consequent upon it.

878. What was the age of the child?—I should say it was nine or ten years old.

879. Was the child in good health?—Perfect.

880. And were the parents in good health?—The parents were in good health; and it was a case of re-vaccination which would have tested the health of the child.

881. Was that in recent years?—Perhaps within the last 10 years.

882. Is the medical man who attended that child alive?—Yes.

883. Can you give us the name of the medical man who attended the child?—His name is Kirkman, and he lives at Horndean, in my own neighbourhood.

884. Are you aware that I was one of the Royal Commissioners on the cattle plague?—I am.

885. Are you aware that the Commissioners made experiments to find out whether small-pox and the cattle plague had any connection with each other, and that they wholly failed in establishing such connection?—I am not; I only know what I see in the Report.

886. You are aware that the experiment to which you alluded was by one of the Commissioners, Mr. Ceely, and that you will not find all through the reports any evidence that any other of the Royal Commissioners entertained that

view?—I do not know that. I have studied those three reports with the accuracy which they perhaps deserved; but there was one thing in this third report which struck me. I find in it these words: "The preparation of this report has from its nature devolved mainly upon the medical members of the Commission." I thought the Commission sat as a jury upon the matter, and they would search into the evidence given by any experts, and not leave to the medical members of the Commission the verdict.

887. Are you aware that all reports must be written by somebody, and that they are always written, not by the whole body of Commissioners, but by one or two members?—I thought probably so.

888. *Chairman.*] You stated that you did not consider vaccination to be a protection against small-pox; do you consider that it is any protection in rendering small-pox, supposing that a person takes it who has been vaccinated, less injurious or more innocuous?—I have said that I think it cannot have that effect; but my observation of late has led me to think that that idea was over-estimated.

889. Supposing it to be over-estimated, how do you meet the difficulty as to the cases being more fatal where people have not been vaccinated, than where they have been vaccinated?—I think that until each case, and the circumstances in which the persons are living are ascertained you can hardly state broadly that the immunity has been in the proportion of the vaccinated to the unvaccinated.

890. Still you must admit that there is a very great difference in the per-centage of deaths between those who have been vaccinated and those who are not vaccinated?—I admit it; and not only that, but I admit that there is a great difference among those who catch it. I take it that in Belgravia, you would find that a very small proportion of the population catch the small-pox at all, and if they have it, they have it very much lighter than they have it in Clerkenwell.

891. For what reasons do they have it lighter?—Because their circumstances are such that they can afford to feed and to lodge themselves properly, and to prevent all those excesses which are the results of poverty.

892. Is it your theory that the small-pox attacks a rich man in a different way from that in which it attacks a poor man?—In a different degree.

893. Do you suppose that it is more fatal to one class than to the other, owing to the different positions in which the persons live?—I do, certainly.

894. *Dr. Brewer.*] Queen Mary the Second died of small-pox, and she was well off?—That was before my time.

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Friday, 10th March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. Hibbert.

Mr. Holt.
Lord Robert Montagu.
Mr. Muntz
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, ESQ., IN THE CHAIR.

Mr. CHARLES THOMAS PEARCE, M. D., recalled ; and further Examined.

Mr. C. T.
Pearce, M.D.
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895. *Chairman.*] YOU made some reference on the first day of your examination to the nurses at the Small Pox Hospital, did you not?—Yes.

896. And you said, did you not, that you supposed that some of the nurses did not take small-pox, owing to their having had small-pox previously to their being engaged?—Yes, I saw one who opened the door to me who was bearing deep marks of former small-pox; that was the only one I saw; so that I presumed that the general remark could not apply to all the nurses, but only to a portion of them.

897. From that, I presume, you mean that their having had the small-pox is to some extent a protection to the nurses from taking small-pox again?—It would be so following the ordinary law that those who have had small-pox are less liable to a second attack than those who have not had it; but it would not be an absolute security.

898. You have stated, have you not, with respect to the Small Pox Hospital, that a large proportion of the cases who have been admitted there were vaccinated cases?—Yes, 84 per cent. since the report of 1866; up to the report of 1866 it amounted to 81.1 per cent.

899. Are you able to state whether what were termed vaccinated cases, were cases of perfect vaccination, or cases where the marks were visible in the arms?—We are yet in the dark as to what perfect vaccination is. A theory has been set up, that those who bear the largest number of cicatrices are the best protected; but such has not been my experience, nor the experience of many others in general practice. At this time there is a patient, I am told, in Highgate Hospital, a young man who has eight cicatrices, four on each arm, but who has now small-pox a second time, having been vaccinated four times. Dr. Jenner held that one puncture was sufficient to produce the disease. The theory to which I have alluded, is a modern theory which I think will be proved to be a fallacy.

900. Are you aware that the per-centage of deaths is very much smaller in the vaccinated cases, than in the unvaccinated cases in that hospital?—So it is made to appear in Mr. Marson's report. I have one comment to make in answer

to that, to which I have not yet called the attention of the Committee, but which is of great importance. Mr. Marson, speaking of the vaccinated cases, says: "Of the 945 unmodified cases, there died 231, or 24 per cent., by which it will be observed that there is a difference of one-third in the mortality between these cases and the unprotected cases; therefore, although the eruption was not recorded in the register as modified or mitigated, the constitution must have received a protective influence as regards fatality, to the amount of one-third, or else there would not have been this difference in the number of deaths." So that the conclusion that they were vaccinated was drawn from the modified condition of the intensity of the small-pox.

901. I suppose that it is quite possible to ascertain whether persons have been vaccinated, or have not been vaccinated?—It is quite possible to ascertain whether the mark is there, but it is not possible to determine what mark specially is better than another. The only test of successful vaccination (and I dwell upon this, because a question was put the other day to Sir Jervoise Jervoise, I think by the noble Lord, as to what is successful vaccination) is the protection thereafter of the patient; there is no other test.

902. Lord Robert Montagu.] The Act grants extra payment for "successful vaccination;" I suppose you would not say that the term "successful vaccination," there refers to the immunity of the patient for ever afterwards from catching small-pox?—It is not defined in the Act what is successful vaccination.

903. It does not mean what you say it means, does it?—I do not know what they mean unless they define an Act of Parliament; a penal Act, Blackstone says, should be construed strictly; there can be no strictness where there is no explanation of the term.

904. Do you know that those extra grants for successful vaccinations are given during the year in which or the next year after they were performed?—I am quite aware that the Privy Council obtained a vote from the House of Commons of 5,000 £, even before the Act of Parliament of 1867 passed, in order to enable them to apply a sum in rewarding public vaccinators, who, although they had already been paid for

for their work, were to be paid a second time if that work was done successfully; but in answer to the noble Lord's question I think I should state that they have been too premature in judging what is successful and what is not successful; you cannot judge immediately though the reward has been given immediately.

905. *Chairman.*] To come back to the Small-pox Hospital, I have before me a return of the number of cases admitted into the hospital from the 29th of September 1870 to the present date, the total number being 765; of these the per-centage of vaccinated is 82, and of unvaccinated 17; the number of deaths being 117, and the per-centage of those deaths, being of vaccinated, 9 per cent., and of unvaccinated, 44 per cent.; does not that return clearly show that vaccination must be a considerable protection to persons who are attacked by small-pox?—Not unless it could be shown that all those unvaccinated patients admitted would not have been attacked with small-pox had they been vaccinated, but they cannot show that; in answer to that question I might ask another, why does small-pox select 82 per cent. of the vaccinated, and only 17 per cent. of the unvaccinated, but that it has a preference for the vaccinated patients?

906. I want to know whether the fact that out of the 117 deaths only 9 per cent. were vaccinated cases, while 44 per cent. were unvaccinated, does not show that vaccination is a very considerable protection to any person who is attacked by small-pox?—I do not think it does; if we take the highest authorities on this subject, among whom I may mention Sir Gilbert Blane, whose authority I presume will be accepted, we find that before vaccination was introduced, Sir Gilbert Blane in this work which I have before me, at page 209, "To some individuals variolous infection produces a disease so malignant that nothing can stay its fatality, while in others the disturbance is so slight as not to deserve the name of a disease, so that there is every intermediate shade of severity and mildness, danger and safety in the cases of the individuals whom it affects, for it is clearly ascertained that there are constitutions entirely unsusceptible of small-pox, whether casual or inoculated, so that there is a series of constitutions of every possible gradation from the unsusceptible through all the stages of mildness and severity, to those in which it is irremediably fatal." It may be dangerous to assume, when you find modified cases in vaccinated patients that that modification arises as a direct sequence, and as a natural consequence from vaccination; it is not a rule, and it is not a law.

907. But if the returns for years past show a much larger per-centage of deaths in unvaccinated cases than in vaccinated cases, does it not rather prove that there is the protection of which I have been speaking?—No; for there is another view to take of it; unless there be a fair analysis of the respective ages (as I pointed out in a letter to Dr. Grieve the other day) at which this modification occurs, no accurate conclusion can be arrived at, because it must be remembered that the natural liability to small-pox without vaccination is less, as I have shown in my evidence, in adult life than in childhood.

908. Referring to your evidence in support of your third proposition, and in which you make a quotation from Mr. Simon, is that quotation given exactly as it appeared in "The Times" newspaper?—I think it is.

909. In the original letter do not the words

"in circumstances of special danger" appear, which have been omitted before the quotation which you give?—I quoted the report in "The Times" verbatim. "In circumstances of special danger," I apprehend, would mean in the case of a severe epidemic as at the present moment.

910. Would not that qualify the quotation which you have given?—It would.

911. In page 41 of your evidence, on 7th March, you say, "Dr. Farr, in commenting on these observations, vol. 30, page 214, by Dr. Robert Watt, makes these important and apposite remarks, showing incontestibly that no saving of infant life has been effected by vaccination." In that quotation from Dr. Robert Watt, does he not in the book from which you quote refer to the wretched sanitary condition of Glasgow at the time at which he writes?—Yes, but it applies to all places where small-pox breaks out. Dr. Farr goes on to say, that while the same causes which develop zymotic diseases remain, it is useless to bar the door against one form of zymotic disease, such as small-pox, by vaccination, while you allow the causes to remain. That is a very scientific and philosophical view to take, that the true prevention of small-pox is sanitary law and not vaccination.

912. You say that the true prevention of small-pox is sanitary law; how do you make that agree with your theory, that when small-pox decreases other diseases increase, and the mortality from other diseases increases?—There are many phenomena and many facts which we find in nature which we cannot account for. I do not know the supreme law, the higher law, as Dr. Farr says, which controls this. He says that there is a higher law which governs mortality about which we know nothing, and I quite agree with him. I cannot explain the fact, but there is the fact.

913. If your theory that when small-pox mortality decreases, the mortality from other epidemics increases, be correct, what good can a better sanitary condition do; because, supposing that a better sanitary condition decreases the epidemic of small-pox, upon your theory, it will only increase the epidemic from other diseases?—A better sanitary condition would reduce the whole mortality; but while the same causes remain, you have this law of compensation, that the causes which this year kill by small-pox, killed last year by scarlatina; and I expect, looking at the cycles which those diseases follow, that next year will be a year of typhus.

914. But you said in your evidence, that death demands a certain number of people, did you not?—I said that death appears to have demanded a certain number of people, the same causes existing.

915. If death appears to demand a certain number of persons, would it not follow that your theory would almost put a stop to all sanitary improvements?—I beg your pardon; death demands 21 per cent., or 15 per cent., looking at the last week's report of the Registrar General in some districts of England, and 45 per cent. in Liverpool, why? Because in Liverpool the sanitary condition is so defective; and in the healthier districts of England death demands fewer, because the causes which produce death are fewer. You must take the same circumstances existing.

916. Your argument is to this effect: that sanitary improvements would reduce a small-pox epidemic in the same way as they would reduce all other epidemics?—Precisely; in the same way

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way as they reduced the plague as Macaulay says: when the people of London lived on dung heaps, and when the straw was not changed in some cases for 20 years, no wonder that plague decimated the people.

917. But is it not a fact that certain infectious epidemics attack persons living in the highest sanitary condition just as much as they do people living in the very lowest?—Yes; I have known diphtheria to attack healthy localities on the high table land of Northamptonshire when there has been none in the valley; but there is no proof that it has not been traced to some person having scarlatina infection having brought it to the village; but what I want to impress upon this Committee is that we do not know what ultimate higher law it is which determines that in 1869 and 1870 there should be scarlatina, and that in 1871 there should be small-pox, and that in 1872 measles it may be.

918. At page 41 you say: "I think there is some reason for inferring that this increased malignity and largely increased mortality from scarlatina is to be traced to the operation of the Vaccination Act of 1853." What is that reason?—We do not yet know what change is produced in the human constitution by instilling a virus (to use Jenner's term) into the lymphatics of the body; I have every reason, from a large experience, to believe that that process, artificial and unnatural as I maintain, has produced a change in the lymphatic vessels and glands, and, therefore, in the constitution of the patient, which disposes him if not to be attacked yet to suffer more from other diseases of an exanthematous nature; the increase of the mortality from scarlatina has confirmed my belief.

919. All that you can say is that there is some reason, but you cannot state what the reason is?—No; we know nothing about ultimate causes.

920. You quote below Dr. Farr; are you aware that Dr. Farr himself recommends vaccination?—I am; most medical men are very orthodox in their belief, like many theologians.

921. Does that apply to yourself?—In neither respects; I am a dissenter in medicine and a dissenter in theology. Farr says: "To operate on the mortality, protection against every one of the fatal zymotic diseases is required, otherwise the suppression of one disease element opens the way to others."

922. In your answer to Question 749 you say: "From Sweden, however, we can derive some information which will serve the purpose of illustrating the law of displacement or substitution of one disease for another;" have you before you the Table in the Appendix to Mr. Simon's Papers to which you referred in giving your evidence?—Yes.

923. Will you state in which year the highest mortality from typhus took place?—I think 1773; the next was 1809.

924. Is not the highest mortality in 1809 from typhus and typhoid fever 21,171?—Yes.

925. How many deaths in that year seem to have taken place from small-pox?—Two thousand four hundred and four.

926. Is it not the case that the mortality from typhus fever in that year is the highest in the whole list, and that the mortality from small-pox is the highest, with the exception of one year?—Excuse me; only nine years before it was 12,032.

927. But I am speaking of the time from the year 1803 downwards?—Yes; but it should be

borne in mind that in this century all fevers have diminished in every country of Europe.

928. But would it not be the case, if your theory of displacement were true, that when you had the largest mortality from typhus in the year 1809 you ought to have had a smaller mortality from small-pox?—You have selected one year in a century, and the only year in which it reached 21,000. If you look at the preceding year, 1808, typhus killed 12,527, and small-pox killed only 1,814. In the previous year, 1807, typhus killed only 8,065, but small-pox killed 2,129.

929. I want to see whether your theory is to be depended upon in all years?—In 99 years out of 100 it is to be depended upon, but 1809 was an exceptional one.

930. In the year 1809 it is not to be depended upon, then?—Precisely; that was such a year of typhus as was never known in the history of Sweden.

931. Does it not also appear to have been an extraordinary year for small-pox?—No; two years before it was 2,129.

932. Still, it was higher than it had been for several years before, was it not?—Yes.

933. In the year 1773, what is the mortality from typhus?—Twenty thousand one hundred and thirty-seven.

934. And what was the mortality from small-pox?—We do not know; it is not recorded; the small-pox and measles were put together. If you look at 1779 you will find that small-pox killed 15,102, and typhus only 3,959.

935. In 1784 what were the numbers?—There you had a high mortality from small-pox when the epidemic prevailed, and there was no epidemic from typhus.

936. How many died from typhus in that year?—Six thousand four hundred and ninety-four.

937. Is not that considerably more than the average deaths from typhus in the previous 10 years?—If you take the years in the intervals between the epidemic visitations, as Dr. Seaton has done in his Handbook, all your conclusions will be fallacious.

938. But I am taking this return as it appears; taking year for year, is your theory to be depended upon?—The number of deaths from typhus in 1785 was 6,785, and the next year it was 6,989.

939. But were not the deaths from typhus fever in 1784 much greater in number than they had been in the eight or nine previous years?—But why stop when the mortality increases and not take the following years? We are now in 1871 and we are now going back almost a century. You have selected one exception to my law in a century, and that is all.

940. You stated, did you not, that the mortality in Sweden is greater since vaccination than it was before?—That is so according to Dr. Farr's returns.

941. Referring to the table in Mr. Simon's book at page 51, does the return there confirm your evidence in answer to Question 745 as to the mortality being greater since vaccination was introduced than it was before vaccination was introduced?—The quotation which I gave was from the Registrar General's reports, not from Mr. Simon. I look upon those reports as reliable instructors on statistics. That table shows the comparative mortality between England and Sweden.

942. This

942. This table gives the mortality of men and women and the excess of the mortality of women over the mortality of men, and it is not a comparison between the countries as to the total mortality, is not that so?—The first column represents the relative mortality in different ages in England of men and women in the years 1851–60, in the 64 healthy districts of England in the years 1849–53, and in Sweden in the years 1830–35.

943. Does not the first column refer to men alone?—The first three columns refer to men alone and the second to women. Then I have taken the comparison between the first and third columns omitting the healthy districts of England. I do not think that the answer to Question 745 made reference to that subject.

944. It makes reference to the deaths in Sweden; and you endeavour to show that the mortality in Sweden has increased since vaccination was introduced?—If you will excuse me, there was no comparison in this answer as to the mortality of the last century; it does not refer to that at all, but only to the comparison between England and Sweden in this century.

945. Lord *Robert Montagu*.] Does not this table which you have pointed out at page 243 of the 30th Report of the Registrar General, merely give the ratio of deaths to ages, and not to the whole population?—Yes.

946. Then how can you use it to prove another ratio?—You may prove the relative ratio, the mortality having increased in adult life, and diminished in infant life; that I admit. Infants principally died of small-pox before vaccination, and now it is adults; you have transferred it from infancy to adult life.

947. Has that table anything to say to small-pox at all?—No; nothing at all.

948. *Chairman*.] In answer to a question which I put to you, you said: “It is evident from those statistics that vaccination has effected no saving of life.” Having said that vaccination has effected no saving of life, do you mean to say that the mortality in Sweden has been as great or greater since vaccination has been introduced, as it was previously?—No; what I meant to say is, as I have said before, that in the absence of the epidemic of small-pox, the whole mortality was not lessened. When the epidemic of small-pox is present, then the mortality is not increased.

949. But is it not the case, if you refer to the table to which I have alluded, that the mortality has decreased very considerably since the year 1821?—I have never disputed that the whole mortality, taking the whole of Europe, is less in this century than it was in the last.

950. You do not dispute that with respect to Sweden itself?—No; but what I dispute is that you have effected a saving of life by vaccination; all testimony is against you; every medical writer is against you; Dr. Guy is the last, who delivered a series of lectures, under the auspices of the Social Science Congress, at the Society of Arts; diseases became much less malignant at the beginning of this century than they were in the last century or in the preceding century, but it had nothing to do with vaccination.

951. Dr. *Lyon Playfair*.] I think you objected strongly to Dr. Jenner’s theory of vaccination; did Dr. Jenner introduce vaccination on account of theory or on account of observed facts?—The observation which he made was that the milkmaids were said to have suffered less or not

at all from small-pox when they had been affected with the disease which they caught from the udders of the cow in milking.

952. Did he not then proceed by experiment to test those facts?—He did.

953. Did he not then proceed to inoculate the persons whom he had vaccinated?—Yes.

954. And did he not find by that series of experiments that as he believed, that there was a protective influence?—I quite admit that he believed so; but it was no test of security against infection.

955. But his discovery arose not from theory but from facts and experiments?—It was not Dr. Jenner alone who knew this; it was not his theory: he founded a theory upon what he had observed and what others had observed; Mr. Jesty, for instance, long before Dr. Jenner; it was mentioned by Mr. Shaw Lefevre in the House of Commons, in a debate early in this century, when Sir Francis Burdett objected to the vote to Jenner.

956. You attached much importance to Dr. Jenner’s views; I think you stated in the book to which you have referred in your evidence, these views of Dr. Jenner’s: “Many unfortunately who have been vaccinated fell victims to small-pox, being as much subject to the contagion of small-pox as if they had never been under the influence of this artificial disease; they fell victims who thought themselves in perfect security;” that is a quotation in inverted commas; then you go on to say, “this accident he attributes to matter having suffered decomposition through being kept for several days;” is there not an error in that quotation?—There is.

957. What is that error?—When my son, who is now in Sunderland, transcribed that for me the error arose; but it has been corrected in the edition now preparing for the press; there is no instance in which Dr. Jenner uses the word “vaccination” at all; it is “inoculation” and while speaking of inoculation he confounds one with the other, so that no distinction was made between those inoculated from the cow and those inoculated from the small-pox; it was an error.

958. At page 56, he says, “A medical gentleman, now no more, who for many years inoculated in this neighbourhood, frequently preserved the variolous matter” (that is the small-pox matter) “intended for his use, on a piece of lint and cotton,” and so on. Is he not speaking all through of inoculation with variolous matter?—Clearly.

959. Then how did the words “who have been vaccinated” become introduced into that passage with inverted commas?—I have explained that, when he speaks of inoculation from a cow, he always speaks of “inoculation,” and he never used the word “vaccination;” that was invented afterwards, to which the words “artificial disease” seemed to apply.

960. But this question refers, does it not, to inoculation with small-pox?—It does. I have seen the error, and I have explained it in the new edition of my work.

961. Then may there not be a similar error in the conclusions which you draw from Dr. Jenner’s statement about erysipelas at page 42 of your evidence of the 7th of March, where you state, “That vaccination directly produces erysipelas, there is no doubt; indeed, Jenner emphatically stated, that no vaccination was protective which did not produce erysipelas.” Where

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has Jenner "emphatically stated" that?—He draws a distinction between that which is protective, and that which is not protective. "It is necessary to observe" (page 7 of his edition of 1798), "That pustulous sores frequently appear spontaneously on the nipples of the cow, and instances have occurred, though very rarely, of the hands of the servants employed in milking, being affected with sores in consequence, and even of their feeling an indisposition from absorption. These pustules are of a much milder nature than those which arise from that contagion which constitutes the true small-pox derived from the grease. They are always free from the bluish or livid tint so conspicuous in the pustules of that disease, and no erysipelas attends them."

962. Are you aware that medical nomenclature is continually altering?—I am quite aware of it.

963. Are you aware that any medical writer of authority, except yourself, ever understood that "erysipelas," as used by Jenner, ever meant anything more than reddening or inflammation; was not "erysipelas" at that period of medical writing a general term used for reddening or inflammation, and not the erysipelas which we understand at the present day?—That is very likely.

964. Then does not Dr. Jenner all through, when he speaks of that erysipelas, speak of it as being trifling and being quickly cured, meaning a mere reddening or an areola, as we now call it?—Not always; he mentions cases in which so sad were the consequences, that he was obliged to have recourse to lotions and other matters, and to keep the patient in bed to cure the erysipelas which had been produced.

965. But in this evidence, do you really mean seriously to tell us that Dr. Jenner thought there was no protection without the true disease of erysipelas following every vaccination?—I do not know how you would define what the true disease of erysipelas is; that should be defined before I can answer the question; I mean the erysipelas consequent upon the process of inoculating with this virus.

966. Do you mean the ordinary disease of erysipelas which appears in the returns of the Registrar General?—I allude to infantile deaths from erysipelas under 12 months occasioned by and mainly attributable to the process of vaccination.

967. But do you mean that Dr. Jenner, in this quotation which you have given, intended to tell the public that no vaccination was protective unless the disease which we understand by erysipelas, was given at each vaccination?—He could not allude to what we understand; if he had been contemporary with us he might have done so.

968. Now going not to Dr. Jenner's theory, but to the theories which you have given us, at page 34 of your evidence of the 3rd March, I think you say, "I submit that this evidence is evidence that re-vaccination predisposes to small-pox," and I think, generally, that you have expressed elsewhere the opinion that vaccination predisposes to small-pox?—Yes, in adult life.

969. It does not predispose to small-pox in infantile life then?—I am not prepared to say that it does or does not; I am not prepared to assert that it does, but I do assert the other proposition.

970. Do you think, then, that original vaccination in a child is not at all protective?—I am not

prepared to say that a child vaccinated within three months of its birth would not be protected against small-pox for some year or two, but I have seen even children under twelve months, who have been what is called successfully vaccinated knocked down with small-pox.

971. At page 39 of your evidence of the 7th of March you give Dr. Marson's statistics of the Highgate Small-pox Hospital, in which you say very correctly that 3,094 cases occurred in 16 years, from 1836 to 1851, all having been vaccinated; were there no unvaccinated cases in that hospital at the same time?—Yes.

972. Were there not 2,654 unvaccinated cases?—Possibly; I have no reason to dispute it.

973. Was the mortality proportionally to the unvaccinated and the vaccinated, the same?—No.

974. What was the difference?—I think the difference was, that it was 11 per cent. in the vaccinated, and 35 per cent. in the unvaccinated.

975. I think that if you calculate the numbers in the table to which we refer, you will find that it was $37\frac{1}{2}$ per cent in the unvaccinated, and 8·6 per cent. in the vaccinated?—Possibly that is correct, after deducting in the vaccinated 10 cases to one, of antecedent, coincident, or superadded disease. That is about the proportion.

976. You are under the impression, as I think you stated, that it is difficult to know when there has been successful vaccination?—Yes.

977. Is it not the case, that in that large number of cases of vaccinated and unvaccinated in those 16 years, where there was one mark, only $7\frac{1}{2}$ per cent. died; where there were two marks, 4 per cent. died; where there were three marks, $1\frac{3}{4}$ per cent. died; and where there were four marks, only $\frac{3}{4}$ per cent. died?—That is very pretty, but it is worthless; it does not tell the quality of the mark; for instance, one good mark is better than half-a-dozen bad ones. I do not dispute the statement; there are many shifts to which vaccinators are put to prop up this theory, and that is one of them.

978. I want a simple answer to my question; I ask whether the tables do not give the results which I have stated?—It will not alter the results, which I have stated, of the proportion of the unvaccinated to the vaccinated cases.

979. Will you answer the question?—I do not deny it.

980. That is the result in the tables which you quoted, is it not?—So it is stated; and I have no means of testing it.

981. Having quoted one part of those tables, and given as your authority, Dr. Marson, you have no more reason to doubt one part than the other, I presume?—Yes, I have.

982. Why?—I have no reason to doubt the results, but I have reason to doubt a theory.

983. But is it a theory when he gives you the number of those with one mark, two marks, and three marks; when he gives you also whether the marks were well developed, and whether they were not in each case (with which I do not trouble the Committee), and when he gives you the exact number in every case and then makes his per-centage, or is it not rather an expression of fact?—It does not alter the per-centage of mortality in the vaccinated. That is his mode of accounting for it; but it does not alter the figures.

984. But is it the fact that he has stated that as the result of his long experience?—I do not dispute

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dispute that he has stated that; but it does not alter the per-centage.

985. At page 36 of your evidence of the 3rd of March, at the top of the page, you are very angry with the College of Physicians because they have stated, as you quote it, that the mortality in the vaccinated was less than one per cent.; was that what the College of Physicians stated?—Yes, I read it from “The Times” the other day.

986. I have before me the original letter of the College of Physicians, is not this what they stated, “The mortality in those who have been properly vaccinated,” and so on?—They do not define what that means.

987. But you have not put it in properly; the original says, “Who have been properly vaccinated?”—I will put in the word “properly.”

988. Do not Dr. Marson’s statistics show that where they have been thoroughly vaccinated the mortality is three-fourths per cent., and that the College of Physicians were right?—No, I do not admit it.

989. Does not his table state that?—I do not think that that is the proper conclusion.

990. Is it not so in the table?—I think not; it does not say much for vaccination if all the rest died; it does not alter the whole ratio of mortality in the vaccinated.

991. Do you believe in the general law of mortality by which all men die?—That is not a law of mortality at all, that is a law of our being; mortality is a secondary affair.

992. Do you believe that all men die?—Yes.

993. If there are a hundred men vaccinated, and one per cent. dies of small-pox, must not the other 99 die of something?—It has never been shown that in any population of 100 vaccinated persons only one died of small-pox. You may say that they are properly vaccinated; but if only those few are properly vaccinated, who Dr. Marson says are properly vaccinated, there are not 10,000 in the kingdom who are properly vaccinated.

994. But is it not the fact that Dr. Marson’s tables rightly or wrongly state that when persons have four good marks, only three-fourths per cent. die?—He states that.

995. I have now come to a very important theory which you have advanced, namely, that there are a greater number of vaccinated in hospitals for small-pox than of unvaccinated; that is a fact to which you have drawn our attention, is it not?—Yes.

996. You also, I think, stated that the Registrar General’s returns show that at the present time the deaths from small-pox are nearly as numerous among the vaccinated as among the unvaccinated?—Yes; the Registrar General has singularly omitted all account of that this week; I do not know why.

997. But the week before last they were nearly equal, were they not?—Yes.

998. From that, I think; you drew the conclusion that vaccination was not a protection?—From that and other reasons, I drew that conclusion.

999. In fact, that vaccinated persons were equally liable to death with unvaccinated persons?—No, I did not state that; I said that they were more liable to attack, not that they were equally liable to death.

1000. What conclusion, then, do you draw

from the fact that the week before last there were nearly as many amongst the small-pox deaths of vaccinated as of unvaccinated?—The conclusion that I draw is that vaccination is a delusion.

1001. And that the vaccinated people and the unvaccinated people are equally liable to be killed by small-pox?—No, not equally liable; the vaccinated are more liable; and the proof of that is found in the fact of four-fifths of the patients admitted in Highgate Hospital having been vaccinated, showing that they are more liable to attack.

1002. Supposing that you were called upon to attend a school containing 100 children; supposing that 95 of those children were boys and five of those children were girls; supposing that small-pox entered that school and killed eight, of whom four out of the five girls died, and four out of the 95 boys died, you have there an equal mortality amongst the boys and the girls, would you say that the girls were equally susceptible to death as the boys?—It varies.

1003. But I am putting to you that particular case?—I cannot tell what the case was, because we have testimony now from the hospitals that there is a difference, that whereas males are more subject in one epidemic, females are more subject in another.

1004. But I am speaking of this special case where there are 100 children in a school, 95 boys and five girls; eight die, four out of the five girls dying, and four out of the 95 boys dying; does that show a similar susceptibility in those proportions in both boys and girls?—Certainly not.

1005. Are you not aware that instead of 50 per cent. being vaccinated as you have stated, amongst all the children in the national schools in this country, 97½ per cent. are vaccinated?—I beg to take exception to that; I think that the reports of the medical officers of the Privy Council and of the Poor Law Board show very different results.

1006. Of 53,000 children examined in the public examination of the national schools for this purpose, how many were vaccinated?—In the report of the Privy Council you will find Dr. Buchanan’s and Dr. Seaton’s returns, which show that in very many schools not 20 per cent. of the children were vaccinated.

1007. But were not 53,000 examined, of whom 49,570 had distinct marks of vaccination, and 508 had doubtful marks of vaccination, and is not that the general result of the whole question?—I do not think it is; I beg to say that that book from which you are quoting is not an authority; the authority is in these books, and the proportion of vaccinated in schools was so small as to excite the attention not only of the Privy Council but of the Legislature, and it was discussed.

1008. I ask you simply whether that is not stated upon authority; we can examine afterwards Dr. Seaton, the officer who made that statement; is not that stated as a fact in the table which I presented to you?—That is very likely.

1009. Are you aware also that within this last week or two, similar examinations have been made in different schools in London, and that 95 per cent. of the children have been found to be vaccinated?—That may be the case in some schools very likely, because I heard the other day in Marylebone that 100 children had been driven into a room and forcibly vaccinated by order

Mr. C. T. of the schoolmaster against the will of their
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1010. Supposing that it is the case that 95 per cent. of the children are vaccinated would your conclusion be a just one that because there are an equal number of vaccinated and unvaccinated persons in the mortality, therefore, the liability to mortality was the same proportion, or does it on the contrary appear that there is a far greater ratio of mortality amongst the unvaccinated than amongst the vaccinated?—No; not unless the mortality tables included only the children in schools; then it would apply but not otherwise; but they include all ages.

1011. The table to which I alluded was an examination of these schools in London in 1863, given in the Sixth Report of the medical officers of the Privy Council?—I took exception to your figures when you said “in this country.”

1012. I gave that as an illustration?—But it is not a fair illustration.

1013. Do you think that they are better vaccinated in London than elsewhere?—We know that they are.

1014. But I want a distinct answer to my question; if the ratio is true, or anything like true, does not the fact that there are an equal number of deaths of vaccinated and unvaccinated when there is a much larger proportion of vaccinated than of unvaccinated in the kingdom show that there is a much greater ratio of mortality amongst the unvaccinated than amongst the vaccinated?—That I admit; but if you add to that the greater liability in the vaccinated, what do you gain?

1015. Now coming to your vicarious theory, I think you have admitted all through your evidence, that there is a very large decrease of mortality in all countries since vaccination was introduced, whatever may have been the cause?—Since the end of the last century there has been; but I would leave vaccination out, as having nothing to do with it; there is a danger in attributing it to that cause.

1016. But there has been a large decrease of mortality, has there not?—Yes.

1017. I think you followed it out further, and said that whatever the mortality may be in a given time, if small pox decreases other diseases increase?—Yes.

1018. Now I want to find out exactly what other diseases increase; within this century there has been a very large increase of deaths in London, resulting from the 2,900 cases of persons being run over by carts and waggons; are those deaths attributable in any way to the decrease of small-pox?—Excuse me, I think there are 208 in a year killed in the streets; an average of four a week; it is under 250, I believe.

1019. I think you will find that it is a good deal more as regards the numbers of accidents, but whatever the amount of mortality which you state correctly, has that anything to do with the decrease of small-pox?—Not a bit, nor vaccination either.

1020. That form of mortality has nothing to do with the increase of small-pox?—Certainly not; I referred to diseases, but that is not disease.

1021. Will you state exactly what forms of mortality are due to vaccination?—When scarlatina was prevalent small-pox was absent.

1022. Do you take all the zymotic diseases?—All the zymotic diseases, as a rule.

1023. Has Dr. Farr said this: “Fever has

progressively subsided since 1771, and the combined mortality of small-pox, measles, and scarlatina is now only half as great as the mortality formerly occasioned by small-pox alone”?—That is very likely to be true, but that does not affect the question at all.

1024. In 1865, that is, the year after the Vaccination Act was introduced, there were 2,000 cases of small-pox in Ireland, and 18,410 cases of fever. (This is not mortality, but these are cases in unions and workhouses.) In 1866 there were 579 cases of small-pox, and 13,553 cases of fever. In 1867 there were 105 cases of small-pox, and 11,703 cases of fever. In 1868 there were 155 cases of small-pox, and 11,209 cases of fever. In 1869 there were 27 cases of small-pox, and 9,976 cases of fever. Your statement was, that all the zymotic diseases increased, and those are the zymotic diseases of Ireland; does that carry out the vicarious theory as regards Ireland?—You have excluded the other diseases; I want all the zymotic diseases.

1025. Those are all the zymotic diseases, including scarlatina and measles; I am taking in the general term, “fever cases” in Ireland?—Does it include diarrhoea, which is a zymotic disease?

1026. It is the fever cases?—I beg your pardon, I say “zymotic diseases:” let us keep to the question, and take the mortality of the whole.

1027. But “fever” is a pretty large class of disease to take at once, is it not?—It only shows that fever is almost a constant quantity in Ireland.

1028. Is it not a decreasing quantity, falling from 2,000 cases of small-pox and 18,410 cases of fever in 1865, to 27 cases of small-pox and 9,976 cases of fever in 1869?—The question is, whether the whole mortality diminished in the same ratio, because if not it does not bear upon the question.

1029. You took the case of Prague, in Bohemia, and I think you introduce the case of Bohemia to show that in two periods there was very little difference in the total mortality before and after vaccination?—Yes; the percentages were 32 and 32½.

1030. Do you mean to say that that is the case in the rest of Europe, because you have already admitted that there was a large diminution of mortality in other parts of Europe?—Yes.

1031. But was there not something very remarkable in the case of Bohemia in there being a much smaller mortality amongst the vaccinated than amongst the unvaccinated?—I do not know; I was not discussing that when I referred to this Table.

1032. During the period which you have quoted did not one fatal case of small-pox occur amongst 7,166 persons, and did not one fatal case of small-pox occur amongst every 40 unvaccinated persons?—Very likely; and what did they gain by that in population? you cited my law of vicarious mortality; and it is in relation to that I presume that you put this question; if you can show me that my law is altered by those facts your question would be to the point.

1033. You have stated to-day, I think very clearly, and in your books equally clearly, that the malignity of all diseases has decreased during this century?—Yes, as contrasted with one, two, or three centuries ago.

1034. In

1034. In your evidence of the 7th March at page 40, you say that all other diseases than small-pox are more severe and more fatal in the vaccinated than in the unvaccinated, especially scarlatina, and at page 41 you say: "I think that there is some reason for inferring that the increased malignity and largely increased mortality from scarlatina is to be traced to the operation of the Vaccination Act of 1853;" have you not just stated that all those diseases have decreased and not increased in malignity?—I said generally that fevers had decreased in this century, and their malignity has, as a rule, decreased; I attribute the increased malignity to which I allude, to your vaccination law.

1035. You say that there is an increased malignity?—There is in scarlatina; diphtheria has now increased frightfully.

1036. Have you ever read Fothergill's standard work on scarlatina?—No, I have not; but I shall be very happy to do so.

1037. If you found in that work that the malignity in past centuries is described as having been certainly as severe as it is at present, would not that alter your opinion?—I do not know whether his opinion clashes with that of Sydenham and that of other writers whom I have consulted.

1038. I think you also said that erysipelas has increased since the introduction of vaccination?—Infantile erysipelas.

1039. If you refer to the Registrar General's return you will find that the population of London in 1851 was 2,362,236, according to the census; and the average number of deaths from erysipelas, from 1847 to 1852, was 652. In 1861 the population was 2,803,989, and from 1862 to 1867 there were 704 deaths from erysipelas, all being below one year; the first period gives you 27 deaths to 100,000 living; the second period gives 25 deaths to 100,000 living; is that an increase or a decrease?—There is a hiatus from 1853 to 1861.

1040. I am giving you the amount given in the table?—Then there is an omission of six years.

1041. That is the nearest period that the Registrar General gives to the Vaccination Act of 1867?—I should like to know whether the mortality is after the passing of the Compulsory Vaccination Act of 1853.

1042. In the Act of 1853 vaccination was allowed to be performed at any time during the year, was it not, and afterwards it was made three months?—It was compulsory in 1853.

1043. Then, at page 43 in your evidence of the 7th of March, you come to phthisis and chest diseases. I think you gave us there the deaths for three periods from phthisis and bronchitis, and you drew a general conclusion as to chest diseases being increased in recent years?—Yes.

1044. You are aware that in recent years, and during that period that you gave us, there has been considerable alteration in the nomenclature of disease?—Yes, there is.

1045. Pneumonia has been separated, has it not?—Yes, I mentioned that.

1046. Would it not be well, therefore, to take all tubercular diseases for exactly the same periods as you did?—No; bronchitis is not called a tubercular disease.

1047. You spoke of general chest diseases, did you not?—Bronchitis is one of the general chest diseases.

0.37.

1048. Then do you think that tubercular diseases have increased?—All constitutional diseases have increased.

1049. Have tubercular diseases generally increased in the three periods which you have specified?—I am not prepared to speak positively; but I think that Dr. Farr tells us that constitutional diseases have generally increased, and in constitutional diseases tubercular diseases are included.

1050. Where does he state that?—I think in the last report.

1051. If you refer to the Registrar General's 30th report, page 238, under the head of "Tubercular Diseases" (and I will take exactly the years that you gave us, namely, 1850 to 1854, with regard to phthisis and bronchitis), does he not give there the number who died from tubercular diseases as 3,655?—Yes.

1052. In the next period, from 1855 to 1859, he gives it as 3,448, does he not?—Yes.

1053. In the next period, from 1860 to 1864, he gives 3367.6, does he not?—Yes.

1054. And in the year of which he is speaking, 1867, he gives 3,389, does he not?—Yes.

1055. Does that table show that there has been any increase or a decrease in tubercular diseases in those periods?—I am not prepared to argue that question.

1056. It is not a question of argument; does the table indicate it?—I thought you asked me a question on chest diseases.

1057. Do we not find that as to tubercular diseases which form a very large class of chest diseases, there has been a decrease during those periods?—But it does not include all chest diseases, and therefore it does not apply to the case; and I reject it.

1058. It is not a question of opinion; it is a question of fact; is it there, or is it not there?—It is there; but you might as well talk about cholera as about tubercular diseases.

1059. Would you have been surprised, however (I confess that I had some surprise), to find that there is a decrease; are not chest diseases apt to increase with crowded populations, and with the increase of the factory system?—Yes.

1060. And if we had found an increase of chest diseases in this country, would it be connected with vaccination, or with the condition of urban populations and crowded cities?—Exactly; and we might also take some discount off for the increased sanitary arrangements which have had so much effect in some localities as to have immensely diminished the proportion of disease in some towns, where drainage has been carried out. That ought to be a compensating balance for the increase from other causes, to some extent.

1061. With regard to the dangers from re-vaccination in the Army, to which you alluded, you brought out a remarkable case in France, where re-vaccination produced an increase of disease, as was supposed; you referred, I think, to a single regiment, which you mentioned?—To one regiment.

1062. Have we the experience of all the armies which are re-vaccinated in Great Britain, Prussia, Würtemberg, Bavaria, Baden, Denmark, and Sweden?—Possibly.

1063. Would not the experience of all these armies be a larger experience than the experience of a single regiment?—I think not necessarily

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1064. Is it not the case that the deaths from small-pox in the whole British Army, which is now re-vaccinated, are upon the average eight out of 100,000 men?—Possibly; I have no reason to dispute it.

1065. Is it not a fact that in the well-vaccinated Prussian army, the total deaths from small-pox scarcely exceed two or three for the whole army?—Very likely.

1066. Is it not the case that in Württemberg, Bavaria, Baden, Denmark, and Sweden, in which statistics exist, small-pox has almost wholly disappeared from the re-vaccinated armies?—Very likely.

1067. Is not that experience of those large armies throughout Europe large enough to overcome the experience of a single regiment?—No, I think not; I think you have to take the mortality from other causes in the army; if consumption is increasing in the Prussian army and in our own Guards, you have gained nothing.

1068. But did not your case refer to the increase of small-pox by re-vaccination?—No, it referred to the production of this outbreak, of which Dr. Ducharme goes on to say "What is the explanation of a phenomenon so striking?"

1069. Was not the phenomenon the appearance of small-pox in that regiment after vaccination?—Yes; he says, "Could I have developed by my operations on men living in common the germs of infection? According to what M. Depaul has so clearly explained in many discourses at the Academy, even that when small-pox epidemics are observed in different parts of the country there we are more likely to find in the byres the spontaneous cow-pox; may I not on my part believe that around these eruptions of vaccine-vaccine that I regard, following M. Depaul's example, as a small-pox of which the virus has perhaps undergone some transformation as to force in passing from the animal to man, but which virus remains none the less pathologically identical only with consequences less disastrous during the different phases of its evolution; may I not consider, I say, that I had caused a development of the small-pox germ, particularly in operating on a crowded population?"

1070. You drew our attention to the fact that small-pox appeared in this regiment after re-vaccination, did you not?—I did.

1071. Is it not the case that we have the experience of large armies throughout Europe that small-pox does not appear after re-vaccination in those armies?—That is very likely.

1072. You also, at page 38 of your evidence of 7th March, quoted the evidence as to small-pox in Geneva, and you stated, "It is remarkable that only 17 of the whole number of cases were over 30 years of age." From that you drew the conclusion that before vaccination, small-pox was an infantile disease and not an adult disease?—Yes, primarily.

1073. Was not that owing to the fact, that before there was any protection, almost all children took small-pox, as almost all children now take measles?—Very likely.

1074. And having had small-pox when they were young, they were not likely to have it when they were old?—Precisely.

1075. Therefore there was nothing very remarkable in that fact, was there?—But I merely

adduce it here to contrast the then existing state of things with the present state of things.

1076. Did you not intend to draw from that fact the inference that there is a greater tendency to small-pox among adults now than there was among adults then?—Certainly; it is proved.

1077. If small-pox was a universal disease, like measles, and attacked everybody who was unprotected, just as prevalently as measles attacks people now, then, they being attacked as children, how was it likely that they would be attacked again as adults?—I heard Dr. Symes Thompson and Dr. Routh say the other night, that vaccination is a better protection against small-pox than small-pox itself.

1078. Your argument, as it appears in your evidence, is that there is a greater mortality now among adults on account of vaccination; is that so?—I said there is a greater disposition to small-pox now in adult life among the vaccinated than among the unvaccinated.

1079. Is not that owing to the fact that children now are protected by vaccination when they are young, and that, therefore, in adult life they may take it?—It is possible.

1080. But in former times, in the times which you have quoted, every child took it, or the great bulk of children took it, as they took measles, did they not?—They took it in some seasons.

1081. And therefore they could not take it when they were old?—Precisely.

1082. Is it true that small-pox is a disease which only attacks infants, or is it chiefly an infantile complaint when it enters populations which have not had it before?—No; it is allied to typhus in that respect; it will attack all ages where people live in violation of sanitary laws.

1083. In great epidemics it has gone to Greenland and amongst the American Indians and others; have not all ages been attacked?—Yes.

1084. Therefore, if you find that there are certain adults now attacked in whom the protective influence has worn out, does it show any greater liability than formerly?—That wearing out theory is a new invention, but it is a fact that four times more vaccinated than unvaccinated people catch it; that is a test of the value of vaccination.

1085. Mr. W. H. Smith.] Do you state as a fact that four times more vaccinated persons catch the disease than unvaccinated persons?—Eighty to 20; that is to say, four-fifths.

1086. Is that your assertion?—Not my assertion; that is a quotation from the records of the hospital; four-fifths of the attacked are vaccinated, and only one-fifth are unvaccinated.

1087. It may be correct that within a given hospital there are 80 persons who have been vaccinated, and who have been suffering from the disease, and that there are 20 persons in that hospital who have not been vaccinated, and who are suffering from that disease, but I understood your statement to be that the number of persons who have been vaccinated in early life who are liable to, and are attacked by, the disease, is four times that of the unvaccinated?—I never made that statement; I think the honourable Member must have misunderstood me.

1088. You made broadly the statement, that four times more persons were attacked by the disease, who had been vaccinated, than those who had been unvaccinated; taking 100,000 persons, of whom 90,000 are vaccinated and 10,000 are unvaccinated, what is the liability of the 90,000 persons in your judgment to the small-pox

as compared with the 10,000 persons who are not vaccinated?—I do not know what it would be, because I have no data; I have given you the data where half the people are computed to be vaccinated; but if you set up the question as to what would happen if 90 per cent. of a population were vaccinated, I have no data from which to draw my conclusion; I draw the conclusion which I give in this evidence from the data which we have, according to which one-half of the population are vaccinated; supposing there are 50,000 vaccinated and 50,000 unvaccinated; of the 50,000 vaccinated, 840 in a thousand will be taken; and of the 50,000 unvaccinated, only 160 in a thousand will be taken.

1089. Then I understand you to assert that of the whole population of whom one-half may be vaccinated, the liability to catch small-pox and to die of small-pox is in the ratio of four of the vaccinated to one of the unvaccinated?—To “catch” it, but not to “die” of it; but more die of the vaccinated than of the unvaccinated population, because there is a greater number attacked. I worked that out the other day, and I have given it in as a sort of diagram.

1090. Upon what data do you assume that the liability is in the proportion of four to one to catch small-pox?—On the statistics of all the hospitals. Taking your Hampstead Hospital at this moment, the number of the vaccinated patients is three or four times the number of the unvaccinated, but it varies; in the Highgate Hospital it is four times the number, and in every hospital you will find that the great majority of the patients are vaccinated.

1091. That is true of a certain number of persons who are found suffering from small-pox in the hospital; but do you mean to assert that it is true of the whole population?—I have no doubt about it; my experience of it is so.

1092. Upon what data do you support your experience?—The data is my experience. The great majority of cases of small-pox in my practice are vaccinated.

1093. Is it not a fact that the great proportion of the population is vaccinated?—Certainly not. Taking the whole population of England, not more than one-third are vaccinated.

1094. What is the case with regard to the population of London?—Taking the population of London, I do not believe that one-half are vaccinated. The other day the Board of Guardians of Marylebone gave directions that every pauper applying for relief for some time, should be examined, and 75 per cent. were found unvaccinated; that is one class. We cannot go into Belgrave-square and lift up the dress sleeves of the young ladies and see if they are vaccinated. They attempted in the Act of 1866 to get a clause to enable them to do that.

1095. Are you aware that the schools in London have been examined, not for the purpose of vaccinating, but to ascertain whether they have been vaccinated?—Some schools have been examined.

1096. Have not so large a number as 53,000 children been examined?—That is not many.

1097. It is a very large proportion of the children at school in London, is it not?—I think it is a very small proportion of the children in London, the population being three millions and a quarter; it is a matter which I shall go into, because I never tire in this work, and I shall be

very glad of any information I can derive upon the subject.

1098. How is it, that if the vaccinated portion of the population are liable to be attacked by small-pox in the proportion of four to one of the unvaccinated, there are so few cases of vaccinated persons suffering from small-pox in London at the present time?—I am not aware that that is the case; I went to Highgate Hospital the other day and the nurse told me the patients were nearly all vaccinated, and many of them twice over.

1099. Is not that a small proportion out of the population of London suffering under a great epidemic?—I think not; I think it is a very fair proportion.

1100. How many patients are there in the Highgate Hospital?—One hundred and eight when full, and there are similar statistics with regard to the other hospitals; taking the last returns of the Asylums Board, you see the proportion of vaccinated and unvaccinated; unvaccinated, 203 admitted; vaccinated, 245; the great majority of those attacked are vaccinated.

1101. Are you aware that we have evidence that 95 per cent. of the children examined are vaccinated?—Of a limited number of children, but not of the schools of London.

1102. Fifty-three thousand children you will hardly call a limited number?—Yes; it is a limited number.

1103. If your assertion be correct that the liability to small-pox amongst the vaccinated is in the proportion of four to one, and if it be true that nine-tenths of the children in London have been vaccinated, there should be 36 times as many vaccinated children or persons in a hospital as there are unvaccinated, should there not?—Excuse me for correcting you; you should have left out “persons”; if you draw a comparison as to children you must keep to children. If they were all children who are admitted into the Highgate Hospital, your argument would hold good; but they are not, they are people of all ages. The 95 per cent. of vaccinated in schools does not represent the proportion of all persons vaccinated. It is not 95 per cent. of the population, but only of some 53,000 children. Are 95 per cent. of all those above 12 years old vaccinated?

1104. I think you have told the Committee that the Act has not been really compulsory since 1867?—Yes; and such is the difficulty in carrying it out that not one-half are vaccinated now, and never will be.

1105. I wish to know upon what grounds you sustain that assertion?—The evidence is that the compulsory law has failed.

1106. Sir *Smith Child*.] I think you mentioned that from a certain period the ratio of general mortality has lessened?—Yes; from the end of the last century.

1107. That you attributed to the sanitary conditions, did you not?—Precisely as Macaulay does, and Guy, and all writers on those subjects.

1108. Whether that be so or not, that period was coincident with the general introduction of vaccination, was it not?—Fortunately for Jenner it was.

1109. Mr. *Muntz*.] In answer to Question 726, you were giving the Committee some information with regard to the report in Mr. Simon's papers

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on vaccination as to the deaths at Prague and the diminution of small-pox, and you said: "Hence, at first sight, an immense saving of life was apparent, sufficient to appal the anti-vaccinationists, and make them for ever after hold their peace. But if we examine further in the way which I have indicated, and take the general mortality, the following is the result: In the first period prior to vaccination (which was the years 1796 to 1802) 'the whole mortality to the population was in the proportion of one to 32, and in the second period it was one to 32½.'" Have you any reason for taking those particular dates?—No, they are given; I did not select them.

1110. Are you aware that in the years 1832, 1848, 1849, 1854, and 1855, which come in your last period, Asiatic cholera was raging frightfully at Prague, and that the population died off at the rate of from 7,000 to 8,000 a year of it?—Possibly; a very good substitute for small-pox.

1111. Would the mortality have decreased otherwise had it not been for this Asiatic cholera?—The whole mortality is included, and therefore it must have included cholera.

1112. What evidence have you of vaccination having been what the world calls successfully performed?—I have none at all.

1113. Might there not be marks on the arm from inoculation, or from various other causes?—Of its having been performed, but not of its success; the only test of success is experience; Jenner said it was protection for ever.

1114. I mean what is called "successful vaccination," that is to say, where there were four punctures, and performed with proper lymph, might there not be also four marks upon the arm from vaccination of any other matter besides the proper vaccine lymph?—There might be.

1115. Therefore the only evidence you have of those persons that you have alluded to being vaccinated is, that they had marks upon the one arm?—Precisely.

1116. They do not vaccinate in this country on both arms, I believe?—Yes, they do.

1117. Have you found any cases in which both arms have been vaccinated?—Yes; I have seen eight good cicatrices, or thimble like impressions, four on each arm, and the person had small-pox twice.

1118. How often in your experience have you known cases of a second attack of small-pox?—A very small proportion indeed of such cases has come under my actual observation.

1119. Are there not often cases of chicken-pox that have marks like small-pox?—You very rarely see it now.

1120. But have you not seen cases of a person's face disfigured by chicken-pox almost like small-pox?—Yes, but not so much now as formerly.

1121. Could you tell from your experience from seeing one of those nurses, whether she had a bad attack of chicken-pox, or the small-pox?—Yes, she was scarified beautifully; I should like to have a photograph of her.

1122. Have you never seen a person's face scarified from chicken-pox?—Never scarified; only with a few indentations.

1123. Mr. *Jacob Bright*.] Have we no better means of ascertaining what is the proportion of vaccinated to unvaccinated in London, than the means which have been suggested with reference to schools, and so on?—No, I think not. I do

not know how the inquiry could be efficiently made, unless it could have been included in the census paper which is about to be taken.

1124. Then is it entirely a matter of guess as to how many persons in London are vaccinated, and how many are unvaccinated?—Entirely.

1125. With reference to the schools, you considered that the number of children examined was quite inadequate to enable us to arrive at a conclusion?—Yes.

1126. How many children then do you suppose ought to be at school in London, or are of school age?—I do not know; but I think we could very soon make a computation which would be approximate. We generally take one in six of the population as the proportion that ought to be at school.

1127. In that case we have apparently examined about one-tenth of all the children in London who ought to be at school?—Yes.

1128. That you consider is a very inadequate basis upon which to form any conclusion?—Yes; and if recently done, still more so, because there have been very strenuous efforts made to push vaccination, and children have been vaccinated per force.

1129. Dr. *Lyon Playfair*.] Are you aware that that examination was made in 1863?—Yes.

1130. Mr. *Jacob Bright*.] In the course of your evidence, you appear to me to have rather insisted that there were as many unvaccinated persons in London as vaccinated?—Yes; taking the computation which has been made, but which is not my own (it is higher than mine), I do not think it is 50 per cent.

1131. I think you referred to the fact that the noble Lord, the Member for Huntingdonshire, as a member of the late Government, in assisting to pass the last Bill, himself expressed that opinion?—He did in 1867.

1132. And therefore you think that to have 84 per cent. of vaccinated persons suffering from small-pox in hospitals, against 16 per cent. unvaccinated, is in itself a very damaging fact with regard to vaccination?—I think so.

1133. If I understand you rightly, you come to the conclusion that the deaths of the non-vaccinated in the hospitals would represent as small or a smaller proportion of the whole non-vaccinated than the deaths of the vaccinated would of the whole vaccinated?—Yes; in a given population, the whole number of deaths would be larger in the vaccinated half than in the unvaccinated half, a larger number being attacked.

1134. That is always on the assumption that there is not more than half the population vaccinated?—Precisely.

1135. When was vaccination made compulsory in Ireland?—In 1863; in 1864 it came into operation.

1136. And when in Scotland?—At the same date.

1137. Have we any means of knowing now what proportion of the Irish or Scotch people are vaccinated?—Yes.

1138. Can you tell me what proportion in each country are vaccinated?—It has been said lately with regard to Ireland, that small-pox has been nearly stamped out, owing to the increased vigilance of the Boards of Guardians and the Registrars, leading us to infer that the whole population were better vaccinated than in England; but on the authority of the Registrar General of Ireland, I have here the per-centage, and I will give

give it you in a condensed form: An examination of the official returns in Ireland show that the per-centage or proportion of vaccinations to births in that country does not differ from that which prevails in England and Wales. The following comparative Table shows this proportion of vaccinations and births: In the year 1866, in England and Wales, the proportion of vaccinations to births was 61; in 1867 it was 64; in 1868 it was 66·5; in 1869 it was 67·3; which, added together, gives an average of 66·5 for England and Wales.

1139. Then have you the statistics with regard to Ireland?—In Ireland, in the year 1866, it was 71·4; that is 10 higher than in England. In 1867 it was 69·4; in 1868 it was 66·5; in 1869 it was 63·9; which, added together, singularly brings it to the same result.

1140. With regard to Scotland, have you the same statistics?—In Scotland the per-centage of vaccinations to births is considerably higher than in Ireland; in some of the districts in Scotland it is as much as 85 per cent. or 95 per cent. of the births.

1141. Then if I understand you rightly, the general statement that I have often seen of late, that Ireland is free from small-pox because it is more completely vaccinated than England, is not a true statement?—It is not founded on fact.

1142. In fact, the proportion of vaccinated persons in Ireland does not exceed the proportion in England?—No; it is the same.

1143. Can you tell me, then, how it is that vaccination should be thought to prevent small-pox in Ireland, and yet that in spite of vaccination we have an epidemic in this country at this time?—Simply from the absence of the epidemic. An epidemic of small-pox occurs about once in every sixth year, and occasionally once in four years; and in all probability following the epidemic wave, which is now passing over Europe, and will possibly pass to the East (in fact, I believe, it is now in Japan, and parts of India). Ireland will, next year, or rather in this year, present a very heavy mortality from small-pox. I have before me the “Medical Press and Circular,” which was published yesterday, from which I read that “the Irish Poor Law Commissioners have officially notified that small-pox has been making progress in the country, and has now become epidemic in Drogheda as well as Belfast Union. Outbreaks have been also witnessed in other Ulster Unions; and at Tuam, Clonakilty, and Wexford, while sporadic cases have occurred on either side of the Liffey, in Dublin.” So that you see it is spreading there; and I have intelligence from Belfast, the official report of which I expect to-day from the Belfast Hospital, that ten deaths from small-pox have occurred, eight of which were ascertained to be vaccinated cases, and the other two doubtful.

1144. *Chairman.*] On what authority do you give those figures?—I give them now from a friend who had a letter from Belfast, and it is reported in the Belfast papers; he is writing to Ireland for the official returns which I expected to get before the Committee met to-day, but there is no doubt that small-pox is spreading in Ireland now, and that vaccination will present the same failure there as it has here.

1145. *Mr. Jacob Bright.*] Have we any means at the present time of ascertaining what is the class or character of the people who are in the

small-pox hospitals in London, that is to say, whether they belong to the middle, the lower, the working, or the pauper classes?—In the Highgate Hospital they do not take paupers now that the other hospitals have been opened; the Asylums Board have provided three hospitals, one at Hampstead, one at Homerton, and one at Stockwell, into which a very large number of patients are received from the various unions of London, but the great mass of the patients in all those hospitals come from the poorer classes, the working classes, the ill-fed, ill-clad, and unwashed population, where typhus comes and where scarlatina comes; to read the description of the purlieu of Westminster where small-pox broke out is really heart-rending in this age of civilisation.

1146. You state that the casual paupers of the parish of Marylebone have been examined, and that it is found that 75 per cent. of them are unvaccinated?—Yes.

1147. Of course on the theory that vaccination is a protection, you would expect to find a very large proportion of this pauper class attacked by small-pox; is that so?—If it were true that vaccination was protective, you ought to have no vaccinated cases at all in the hospitals.

1148. But at any rate you ought to have an enormous proportion of this pauper class now suffering from small-pox of which you say 75 per cent. are unvaccinated; have we any knowledge whether that is the fact? I do not know; those hospitals have been so recently opened that we have really very small data yet to guide us to any conclusion on the matter.

1149. It has been stated very frequently that the nurses in small-pox hospitals do not get attacked by small-pox. I observe in your evidence that you give at least one exception to that rule, and you say that “Mr. Rutherglen, the assistant clerk, gives me the most astounding information, that at Stockwell, a nurse recently engaged, who was selected because she was pitted with the small-pox, was re-vaccinated by Dr. McCann, and is now in bed with confluent small-pox.” Why do you consider that to be astounding information?—After the boasting which has been reiterated again and again that the nurses in small-pox hospitals enjoy an immunity because they are vaccinated on admission, this woman it appears had small-pox. If they had let her alone it would have been a great deal better, but they vaccinated her, and she gets small-pox.

1150. *Chairman.*] Do you mean to say that she took small-pox after she entered the hospital?—Yes.

1151. *Mr. Jacob Bright.*] But still, of course, the statement that we have heard, I admit, repeated very often, may have been, and probably was, perfectly true, and this case may have occurred also?—Yes.

1152. It has struck me that your general evidence rather went to show that vaccination did diminish deaths by small-pox, but that it did not diminish the mortality generally, is that your view?—I said, or endeavoured to say, that admitting the whole of the argument on the other side, and supposing such a condition did exist as that, you have a diminution of the deaths from small-pox by vaccination; nevertheless, you have not shown any gain in the whole mortality, and there is no reduction of the mortality.

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1153. Is there a very great change in the treatment of small-pox now from what it was a number of years ago?—Yes, an immense change; I do not know that there is much difference now in the ordinary treatment from that which was pursued when Sir Gilbert Blane wrote in 1822, contrasting the then existing treatment with that which obtained in the last century; he says that then there was no soap except what was imported from abroad, excepting a little that came from Bristol; that there were no water-works, and that the people lived so filthily, and were shut up in such close ill-ventilated places, that it was no wonder the mortality was large; now, he said we attend more to the sanitary condition of the bed-room and of the patient.

1154. Can you say whether children who have reasonable attendance, and who are in tolerably fair conditions of health, having the small-pox would be very likely to be left marked?—I think that, as a rule, the marking from small-pox is a disgrace to the profession, and I speak from large experience; if proper means were used, which are not orthodox (I am sorry to be obliged to refer to this), neither the great mortality which obtains nor the marking which follows would exist.

1155. To what means do you refer?—The other day I heard of a case in which the poor patient was not allowed to drink or to be touched with cold water for three weeks; I have given a case in my evidence of a child to whom I gave a bath twice a day, and the child gets well, not having been vaccinated, without a mark; the other child playing about the room the whole time, not being vaccinated, does not take the disease at all, and that room is as healthy as this. If the College of Physicians had told the people how to cure small-pox instead of recommending vaccination, it would have been more within their function, but I do not think they know themselves.

1156. Mr. Taylor.] You have given an argument in evidence, I think, and it has not been denied, that four-fifths of the cases in the small-pox hospitals are patients who have been vaccinated, which you regard in itself as damaging to the theory of vaccination?—Yes.

1157. I think you answered the honourable Member for Manchester just now by saying that if vaccination were a protection, there should in fact be no cases at all of small-pox?—Precisely.

1158. But I think it is allowed on all hands, is it not, that there is no such thing as absolute protection against small-pox; as for instance, Dr. Marson, I see, says, that out of a number of cases in a series of years 19 per cent. of those who died had actually had the small-pox before, which probably you do not dispute?—No.

1159. It is not, therefore, a question of absolute protection at all, but of comparative protection, is it not?—Not now, seeing its failure, but Jenner said that vaccinated persons were protected for ever; I presume that meant as long as life lasted, and upon that Parliament gave 30,000*l.* as a reward, because he had a specific which would protect the population for ever, and which in 30 years would exterminate the disease from Europe; 70 years have passed away, and here we have an epidemic such as we have not had for 30 years.

1160. There is, however, an opinion prevalent at this time among medical men that the principle of vaccination is a sound one, and yet none of

them maintain, I take it, that it is an absolute preventive against small-pox?—Precisely; it is abandoned as an absolute preventive.

1161. It might, therefore, be true as a theory, that the whole population should be vaccinated, and yet small-pox not be extinct, might it not?—Precisely.

1162. Then in a small-pox hospital it is possible that every case may be a vaccinated one, is it not?—Yes; it is possible.

1163. And yet at the same time the disease, as regards the whole population, may have been all but stamped out?—I think not.

1164. Supposing that vaccination were general, and that the disease of small-pox had, in proportion to the whole population, diminished nine-tenths, or ninety-nine-one hundredths, nevertheless small-pox would not have been absolutely extinct, but *ex-hypothesi*, every patient in the Small-pox Hospital would have been vaccinated?—Yes.

1165. Therefore, those figures, with regard to the proportion of vaccinated and unvaccinated patients in small-pox hospitals, in themselves without other considerations, prove nothing whatever; is not that so?—They prove that vaccination is a failure; they prove that unquestionably the vaccinated are not protected although they are called protected.

1166. I think it is your opinion (though you do not attribute it to vaccination) that the malignity of small-pox, like the malignity of almost all other diseases, has diminished in this country?—That is my opinion.

1167. You therefore would not agree with Dr. Woodward, who says, that “the records of the Small-pox Hospital show that during the last 25 years of last century (when the patients were of course all unvaccinated) the death-rate in the hospital was 32 per cent. of the admissions. In the same hospital during the years 1836 to 1851 the deaths (excluding the vaccinated) were 35 per cent.,” or rather more; from which he would argue that the actual malignity of the disease, apart from vaccination, had rather increased than diminished?—Certainly not; I think it only fortifies the ground I have taken, that the assumption by Mr. Marson, that the modified cases have been vaccinated when they may not have been vaccinated, militates against the theory that the vaccinated have an advantage over the unvaccinated, because the mortality is greater than it was in the last century; he loses 35 now in 100, the average mortality of the unvaccinated having been only 32 in 100; but it is not so malignant, as everybody knows.

1168. Dr. Brewer.] The report of Dr. Grieve, I think, is what you object to; you imagine that he has taken a wrong average, 582 patients having been admitted and 232 remaining, and you say it is plain that 350 have passed through the hospital, and there, therefore, must have been 99 deaths?—He states that there were 99 deaths.

1169. And that, therefore, this mortality should not have been 17 per cent., but 28 per cent., because the 99 deaths ought to have occurred out of 350 cases?—Yes.

1170. Are you aware that those reports are current reports rendered to the board every fortnight, and that they must tally with the actual deaths in the hospital?—Then that should be stated.

1171. I need hardly say that having an account of the deaths and burials, we cannot have them

them omitted, but they are current accounts settled at certain periods; I have the corrected account, which will perhaps satisfy you on the subject; as you have requested, I have carefully gone over the first 500 cases admitted, taken from the 1st of December 1870 to the 28th January 1871; the cases may therefore be considered complete, for few or none remained in hospital, or were kept merely for isolating purposes; of those 500 a total of 103 have died, giving a corrected per-centage of 20, being somewhat over the per-centage which I stated; 312 were vaccinated, of whom 36 died, giving a per-centage of 11·2; 138 were unvaccinated, of whom 67 died, giving a per centage of 48·4; the consequence is, that there are 37·2 per cent. of deaths of those who are unprotected in excess of those who are protected; I think you also find fault with his saying that 7 per cent. of the protected died at that time; he said that he found those deaths in most cases complicated with other diseases, and especially complicated with diseases arising from gin-drinking?—The words were, I think, that they exhibited evidence of a previously vitiated constitution.

1172. In fact, he says that it is intemperance; I have seen those cases, and we have inquired into them; it is true that they are gin-drinking people, and that the disease is special and characteristic, *purpura sanguinea*, there can be no doubt whatever; therefore if you take out the seven from either of those cases, yours and the others, you have 41·4 who die by neglect of vaccination; do you agree to that?—No, I think it is not very creditable that, whereas in the last century, when small-pox was such a frightful disease, only one-third died, you have in 1871 48 deaths in 100 of the unvaccinated.

1173. I have nothing to do with the credit of it, I have only to do with the facts; is it not a fact, according to the figures which I have read to you, that 41 in every hundred have died from the neglect of vaccination?—That is your deduction; it is negative evidence, because you assume that the vaccinated would not have had it so mildly if they had not been vaccinated.

1174. Allow me to put a case to you: one striking instance of the power of vaccination to prevent, or at least to modify, small-pox, is in the case of twins; one is a vaccinated twin, and the other is not a vaccinated twin; they are both at the breast, and about three months old; the vaccinated twin has a trace of small-pox, the unvaccinated twin is seriously ill, and it is doubtful if it will recover; how do you account for that?—I cannot account for it; I cannot account for the different susceptibilities of children; it is noticed by Sir Gilbert Blane, as long ago as 1822; in the year 910, it was observed by Rhazes.

1175. I was at the hospital yesterday, and there was a woman there who has been vaccinated, who has small-pox with the slightest trace in the world; her child is your disciple, and has not been vaccinated, but that child last night was dying (and I believe died) because she would not have it vaccinated; within three or four beds of her, is a case of this sort: the mother unvaccinated and the child vaccinated; the mother with small-pox, and the child at the breast with no small-pox; those are all cases of the same kind; how do you account for them?—It is not very extraordinary that an infant taken into a

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hospital with 500 patients should die of small-pox, not having been vaccinated.

1176. But the child came in because it was diseased; it came in because it had confluent small-pox. Let me take another case still in the same class; he says, that “amongst vaccinated persons, I mean of course well-vaccinated persons, small-pox is the most trifling and most harmless disease I know of;” is it therefore quite fair to say, that small-pox in a vaccinated case is the same kind of disease at all as small-pox in an unvaccinated case?—Not always.

1177. Is it not very different?—Sometimes; not always. Dr. Corner, the other day, at Mile-end, reported four cases in one house, two vaccinated and two not; the two vaccinated died.

1178. “We have not lost any vaccinated children by small-pox,” writes the doctor from the Homerton Hospital. “How rarely do you ever see a vaccinated child with small-pox?” I know that your experience is like everybody else’s; like my own, I suppose. Do you see any difference whatever, taking 500 cases, between persons attacked after vaccination and those attacked when they have not been vaccinated?—I admit that my experience has shown me that while I have had a great majority of vaccinated patients, the mortality and the severity in those cases is different in different individuals; but I have had sufficient reason to attribute those differences to differences in constitutional susceptibility rather than to vaccination; in addition to which, I beg to observe that few of the vaccinated patients can be said to be in a healthy condition, whilst those who have had small-pox and recovered are seldom ill afterwards.

1179. You attribute the development of disease to vaccination, but you do not attribute any development of disease to small-pox; are you aware that the very identical things which you attribute to vaccination are to be attributed to severe confluent small-pox in unvaccinated cases; what do they die of principally?—I think I may answer that from Mr. Marson, who says: “The deaths, 11 in number, from antecedent, coincident, or superadded diseases may be thus arranged: in the unvaccinated cases one died from scarlatina, but in the vaccinated 10 died from complications.” Ten to one, that confirms my experience.

1180. I find that in acute cases of small-pox, the common diseases of which they die are, bronchitis, pneumonia, pleurisy, or some pharyngeal disease; that is when they are recovering from severe small-pox; do you agree with that?—Exactly, as the result of small-pox; but Mr. Chambers, the honourable Member for Marylebone, who occupied the chair at a meeting in Marylebone, at which I spoke, said, “I can bear testimony to the correctness of Dr. Pearce’s observations. I had small-pox when I was young, and I have the stamped receipt, I have the freckles on my nose; but I have never had a day’s illness since, and I have observed it in others,” but the vaccinated are never well.

1181. I am speaking of the unvaccinated who take acute forms of small-pox?—I presume, whether they are vaccinated or not, all who die would die in the last stage of congestion of the lungs.

1182. Precisely the same as what you attribute to vaccination?—Precisely; there would be no difference in that case.

1183. Do you know of many cases that die

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of bronchitis, pleuro-pneumonia, pleurisy, and phthisis after small-pox?—I have looked in vain for years to find a case of phthisis in a person who has had small-pox, unless there is an hereditary taint.

1184. Zymotic diseases undoubtedly may be taken principally as measles, scarlatina, whooping cough, and small-pox; which of all those do you consider the most difficult to control, and the most fatal if you bar vaccination?—There is no difference in proper treatment in the fatality of all those diseases, excepting that after whooping cough in very severe seasons you are apt to get congestion of the lungs, but in the case of measles, scarlatina, and small-pox, according to my experience no more ought to die of one than of another, that is about 2 per cent

1185. In all tables of diseases amongst exanthematous diseases, which ranks as the most fatal?—That is another question: small-pox, of course, because they do not know how to treat it.

1186. Then if you have what you confess to be, in fact, a certain thing which prevents the severity of small-pox, and the fatality of small-pox, have you not, in using that prophylactic remedy, a marvellous national advantage?—You have no advantage over the proper observance of sanitary laws. To prevent it by those means is better than vaccination. You do violence to the constitution by inoculating a child, or a man, or even a beast, with the virus of another creature; and I may, in answering that question, quote from the Appendix to the 3rd Report of the Cattle Plague Commissioners, page 148, the opinion of a man whom I am quite sure on the mention of his name, you will admit as having some authority; I refer to Dr. Lionel Beale. Dr. Beale said in his evidence: "It seems to me that germinal matter may lose formative power, and become degraded, and cannot acquire or regain it when lost. There is, as it were, no return to a higher position of living matter, which has once suffered degradation; nor can degraded germinal matter produce descendants with exalted power." It follows, then, as a philosophical inference from Dr. Beale's hypothesis, that the germinal matter, vaccine, being degraded in passing through the cow, whether the cow be inoculated with variolous matter from the human subject, or from the horse, cannot regain its higher position, and, therefore, it cannot protect the recipient from small-pox; it cannot get back, or recover, its lost qualities; it is degraded; that is a fundamental law.

1187. I do not believe in fundamental laws; but, I think you have confessed these things. You know the Carlisle Tables?—Yes.

1188. You know that the Carlisle Tables were made at a very early period of this century, and that in the middle of the century preceding they reckoned that death in London was in the proportion of 1 in 28. We have now shown that the present death-rate is only 1 in 40; has the mortality diminished or increased between the ages of 20 and 40, since vaccination has been almost universal?—It has diminished at all ages, because of its lesser malignity. I am glad that you have gone back to that century. I have already repeatedly, in giving evidence, expressed my entire concurrence with the observations (not the opinions) of those writers, that all diseases were more malignant at that time, and that the

mortality was heavier than it is now; but that has nothing to do with vaccination.

1189. It is very odd, is it not, that that occurred just about the time of vaccination?—Very odd, like many other coincidences.

1190. Mr. Alderman *Curter*.] Did I rightly understand you to say that the vaccinated were never well?—As a rule in vaccinated families, growing children are seldom without a doctor, and those who have had small-pox seldom want one.

1191. Will you allow me to ask whether you were vaccinated?—Yes, unfortunately; and I very nearly lost my life by my glands being poisoned with the vaccine lymph, and my mother cursed the vaccinator. Whether Heaven blessed her curses, or not, I do not know.

1192. How do you account for my case. I have been vaccinated, and I never had a week's illness in my life?—Perhaps it did not take.

1193. You were called, I believe, as a witness at the petty sessions of Kettering?—Yes.

1194. What was the nature of your evidence?—The nature of my evidence was, that the child whom I examined, presented depressions consequent upon a mild attack of small-pox, which kept it in bed for some days, and hearing the testimony of the parents and the grandmother, and those who had attended it as to the nature of the suffering of the child, and the amount of fever, I drew my conclusion, and that from experience, that that child had had small-pox and not chicken-pox. But a late patient of mine who sat upon the Bench, Captain Robinson, the eldest son of Sir George Robinson, together with the other magistrate who was on the Bench, preferred to take the evidence of the vaccinator of the place rather than mine, and gave a decision in favour of the vaccinator, who, by the way, had never seen the child either; but his evidence was preferred for this reason, that I had delivered lectures and spoken at public meetings in Northampton, and evinced my antagonism to vaccination, and therefore the evidence of the other was of greater value. That is judge-made law.

1195. I think I understood you to say, that in times of epidemic, especially in reference to small-pox, the general mortality decreased, and was lower than usual?—Generally.

1196. How do you account for that?—I cannot account for it; it is one of the things that we cannot account for. There are the facts that when scarlatina was prevalent last year, the mortality was 13 above the average of 10 years; but when small-pox came the mortality went down directly.

1197. Then you do not account for it?—I cannot account for it; it must be a law of nature with which I have nothing to do; but that is the fact.

1198. But do you not think that it is occasioned by the stricter enforcement of sanitary laws in those places where epidemic breaks out; I will put a case to you; having been connected with a board of guardians in a large town, and with the sanitary committee of a corporation in times of epidemic, I know that then there is usually much more activity on the part of the sanitary officers than at any other time; and may not that and the greater distribution of food among the people, and the greater attention to sanitary laws generally, account for it?—No, because I believe they

they were just as active in London during the epidemic of scarlatina as during the present epidemic. If your observations applied to all epidemics, if guardians are more vigilant during any epidemic, you ought to have had a less mortality from scarlatina; but you had a greater; it was above the average.

1199. As a rule, I understood you to say that when there was an epidemic of any kind the general mortality was less; and that you think that result was occasioned by better sanitary measures?—I quite agree with the late Lord Palmerston, who, when a few fanatics of Edinburgh requested him to have a day set apart for prayer in consequence of an outbreak of cholera, said, "First cleanse your city, and then pray to God;" I say, "First cleanse your city, and then avoid vaccination."

1200. I take it that you are a member of the Anti-vaccination League?—Yes, I am proud to be so.

1201. And as a rule you will agree, I dare say, with what is stated in their publications?—I am not responsible for their publication at all.

1202. But as a rule you agree with what they state?—No; there are some things which I should not agree with. The League has published very little indeed; not enough in my opinion; they should have done what the Anti-Corn Law League did in my opinion. Some members in that League have published things which I certainly should not have approved if I had been consulted.

1203. Do not the members of the League look upon you as a great authority in reference to vaccination?—I do not know; I flatter myself that I am known, but I do not know what they think of me; I know that the vaccinators do not think much of me.

1204. Do you agree with them when they publicly put forth statements of this kind, that "the question of vaccination is with the Allopaths simply a question of bread and butter"?—Yes, I think so; I would say Amen to that; take away the pay and you would not hear much of vaccination. The object of the last Act of Parliament was to increase their pay, and they got 5,000 *l.* to go on with before the Act passed.

1205. Is it your opinion as well, that it is proper to apply the term "charlatan," that is to say, mere pretenders and quacks to them?—No, I do not agree with that.

1206. Then you do not agree with those who in their publications apply the word "charlatan" to 30,000 Allopaths?—No, not at all; but still I agree with what Sir Jervoise Jervoise said here the other day, that medicine is not a science at all.

1207. You were at one time of your life I believe an Allopath?—Yes; I was educated in all the wisdom of the Egyptians, and brought up at the feet of Gamaliel.

1208. Were you then as honest and sincere in your views, and as upright in your mode of life, as you are at the present moment?—Quite; when I opened a vein and let the blood cover the looking-glass in a drawing-room.

1209. May not those 30,000 men, who have not the light which you have, be as honest and as interested in the public weal as you were at that time of your life?—I hope so; I would not say that they were not; still vested interests are very strong; public vaccinators have had more

than a million out of the poor rates, and it is a dangerous thing to touch a man's purse.

1210. Do you think it a proper term to apply to those persons to call them "disease mongers"?—No, I should protest against that; I am quite sure that the League has never issued publications containing any such epithets; it would disgrace the League. I would leave it to-morrow if I thought they used such language.

1211. Are you aware that the publications which have been sent to us as Members of this Committee apply that term to the general body of practitioners in England?—May I ask what publications they are?

1212. I refer to "Medical Freedom," in an article on vaccination?—I know nothing about it.

1213. You are not at all responsible for such an expression as that applied to the general medical faculty?—Certainly not; nor is the League.

1214. You would not consider that such a remark as that was justly applicable to them, or that it would be correct to call them "limbs of the serpent of falsehood"?—Most certainly not; that is a most extraordinary expression.

1215. Are you aware that those expressions are used in this publication which has been sent to me in reference to this subject of vaccination, with a view of convincing me that vaccination was wrong, and that the great body of the profession were only liars and interested people?—I hope that no Englishman ever committed himself to such an expression.

1216. Do you look upon most of the public vaccinators of this country as felons?—No.

1217. Or as deserving of the most severe punishment which society is able to inflict on murderers?—I do not approve of that language; I am not responsible for it.

1218. You do not, as an authority in reference to vaccination, and in reference to the medical profession, endorse views such as those?—Most certainly not; if you can find anything that I have ever written which would give you any justification for suspecting such a thing, I should be glad to have it pointed out to me.

1219. I have not seen anything which you have written which would at all justify me in coming to that conclusion; may I ask you, then, what, in your opinion, is likely to be the effect of such language and such writing being freely distributed among the people?—I think the effect would be to beget a very strong animus against the whole movement against vaccination; and all sensible men would, I hope, throw such trash in the fire, or put their foot upon it at once.

1220. That has certainly been the effect on my own mind, because I came unprejudiced to this Committee, and I confess to you, that being myself a non-medical man, that has been precisely the effect which such publications have produced upon my own mind?—I think you have rightly judged the matter.

1221. Mr. Holt.] Have you made this question of vaccination your special study?—I could not, engaged as I am in my professional pursuits, frequently attend to it 12 hours a day. I could not devote my whole time to it; but I have given special attention to this subject, I may say, for at least 18 years.

1222. I think I understand you to admit that vaccination does, to some extent, temper the severity of an attack of small-pox?—Yes; I

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admit that it is possible that in one form of small-pox vaccination does hold a pathological relation to it; but in other forms of small-pox, of which there are various kinds, it has no relation whatever. The strength of my argument, I think, rests also upon one very important fact, which has not yet come out in this evidence, and which ought not to be lost sight of, namely, that no disease of the lower animals is infectious to man. God has thrown a cordon of immunity round the highest type of the mammalian class, man, in order to screen him from the diseases of the lower animals. That law of the Creator is violated by the hands of the vaccinator when he infuses into the human constitution the disease of a lower animal, which the Almighty never intended he should have.

1223. May I ask what you include amongst the "lower animals"?—Such animals as the horse, the cow, the sheep, and the goat, &c.

1224. Is it not the fact that some ailments of animals are communicable to man?—Only by inoculation, not by infection; glands you can inoculate but you cannot infect. Thousands of animals have been dying of cattle plague lately in France, and 600 men have been engaged in burying the carcases of those creatures. Have they taken the disease? No, unless they have handled them with a scratched finger, and then by inoculation (or vaccination if it happens to be an old cow) they may die. Samuel Cooper, one of my early instructors, died many years ago, and who was lecturer in surgery at University College, London, said, "Gentlemen, the difference between inoculation and digestion is this: you may season your beefsteak with syphilitic virus and take it into your stomach with impunity, but do not put an infinitesimal drop into your veins, it is dangerous." He agreed with Hunter that it was a violation of the human constitution.

1225. Have you ever known in your experience an attack of confluent small-pox after vaccination?—Many; within this month I have had such cases.

1226. Admitting, as you do, that a certain amount of immunity arises from vaccination, can you ever be sure after vaccinating a patient that the operation has been properly done, and that that patient is protected?—Certainly not, because you know nothing of the receptivity or constitutional character of the individual.

1227. Have you any proof at all from the appearance of the patients that it is properly done?—None whatever, nor has any human being.

1228. You told us that the number of deaths was pretty constant; in saying that, do you allow for the increase of the population?—Yes, the per-centage of deaths per million is taken into account.

1229. Is that view confirmed by any medical man of eminence?—The fact is that very few medical men give attention to those statistical matters; many to whom I have commended the study of those statistics say, "Oh, bosh; I cannot be bothered with all these books; I am glad to have my glass of grog and go to bed." I have sat up at work till 5 o'clock in the morning, lately I have sat up till 2 o'clock to get my evidence ready; I had only 12 hours sleep last week.

1230. Would you suppose that, when in a large number of years there is an exception in a few instances to your theory, that might be accounted

for by the existence of any special circumstances in particular years?—Yes. Climatic changes will produce an immense increase of chest diseases frequently. Also you may have a visitation of Asiatic cholera, which occurs once in 17 years; it came in 1832, in 1849, and in 1866; and I presume that in 1883 we shall have it again, in obedience to the higher law to which I have alluded. There may be accidents interfering with a general law, but that does not invalidate the general law. In reference to Sweden, one case in 100 years was pointed out this morning, still there the law remains.

1231. Mr. Cave.] The importance of the Highgate Hospital case depends entirely, I think, upon the number who are vaccinated or unvaccinated in the population; will you tell us again how you get your computation as to only one-half of the population of London being vaccinated?—Looking at Lord Robert Montagu's speech, which I read last night, and which he made in the House of Commons in 1867, which speech was composed of figures which must have been furnished by the medical officers of the Privy Council, I apprehend that from the same source he derived the computation which he gave, that not more than half, and perhaps not as many as half, the population were vaccinated.

1232. Have you any statistics of your own which would lead you to the conclusion that this computation is correct?—No; I have made a computation, looking at the Poor Law Board Reports, and, unless there has been a great increase of vaccination since a year and a-half ago, I do not estimate that the proportion of the vaccinated in London is more than from 40 to 45 per cent. of the whole population.

1233. But you would not rely upon those figures?—No, we have no data. Then Lord Robert Montagu also stated, that of the proportion vaccinated only one-third were properly vaccinated; so that only one-third of one-half, that is to say, one-sixth of the population are protected, and five-sixths ought to get small-pox.

1234. Of course the importance of the Highgate Hospital case depends entirely upon the correctness or otherwise of that computation, does it not?—I may just call the Right Honourable Member's attention to one feature in that, and it is this, that in proportion to the increase of vaccination, in relation to the number of births in London, has been the ratio of vaccinated to unvaccinated in the hospitals. It went on increasing from year to year.

1235. That one would expect; but you have still an unknown quantity, and that is the exact number who are vaccinated?—Yes; it is an unknown quantity.

1236. When you stated the number of vaccinations in proportion to births, which you have given in some portion of your evidence, did that statement include the adults who had been vaccinated, or only the infants?—It includes more than the infants born in the year. The births in the year are given, and the ratio of the vaccinations to the births are given, but a discount must be taken off this, because in one year there were 112 per cent. of the births vaccinated, that is to say, 12 per cent. more than the births, so that it must have included older children.

1237. You do not know to what age the list extended?—No, it is in the Poor Law Board Returns.

1238. You

1238. You stated just now that in Ireland, where we hear that vaccination is very general, small-pox is now extending; is that the case with regard to Scotland?—I am not aware; I have no Scotch returns here just now; I do not expect it in Scotland until next year; but I think it will be due next year. I predicted it at the end of 1870, in England.

1239. Is it your idea that in spite of the 95 per cent. who are vaccinated in Scotland, the epidemic will still extend there?—Yes; Acts of Parliament will not keep away epidemics. The cloud will come over.

1240. You stated, I believe (very properly), that Westminster is perhaps one of the worst quarters of London, and that therefore the small-pox was very general, and very fatal there?—It is generated there, you may say.

1241. Would you expect it to attack a battalion of Guards quartered in the middle of Westminster?—Decidedly.

1242. Would you expect that it would be very general and fatal?—It might not be fatal in a regiment of soldiers, because they have plenty of space and ventilation, and their food and cleanliness are attended to; it is very different from having 17 persons huddled in one room, with a dead body on the table.

1243. Would you expect to find it very general among the soldiers?—No; I should say that on that account it would not be general, and would not spread; it is rather remarkable that at Sheffield a few years ago, small-pox broke out in the barracks when there was no small-pox in the town; only the soldiers had it, and they were all vaccinated; that will happen on board ship sometimes, all the sailors having been vaccinated.

1244. Do you know that in the Guards every man is re-vaccinated when he joins?—Yes.

1245. Should you be surprised to hear that there were only five cases in the battalion during the whole time of this epidemic at Westminster?—I did not know that there had been five even; I should think it very likely that there would be more; but re vaccination is a serious matter when attended with the danger which was found to attend it at Shorncliffe a few years ago; it would not become general among the soldiers in Westminster; because they are very much better as to their sanitary condition than their neighbours, and not because they are vaccinated.

1246. Still you know, probably, that soldiers habitually frequent in the worst parts of Westminster?—Yes.

1247. Would you not be surprised to hear that there have been only five cases of small-pox among the soldiers, and those very light?—I am not surprised to hear that, because their mode of living is very different; you will find small-pox in its most malignant form among those who are half-starved.

1248. I understood you to imply that you thought small-pox would be general among the soldiers?—I think not.

1249. You said that vaccination and re-vaccination would produce a tendency to small-pox, did you not?—To go back to Highgate again, and judging from the statistics which I have given in my evidence, and which deserves some consideration, of the change which has occurred in the ages of those attacked showing that the great majority are now from 20 to 30 years of age, I apprehend that there is a greater liability

in the "protected" than in the unprotected, and there is also that citation which I gave from the report of the Academy of Medicine in Paris, of the re-vaccination of that regiment of the Voltigeurs of the Guard.

1250. Then would you consider that this instance which I gave you of the battalion of Guards which has been in Westminster during the epidemic was an exceptional one, because re-vaccination there (all the soldiers having been re-vaccinated when they joined the regiment) does not seem to have produced this liability to take disease?—The re-vaccination in that case may have been years ago; but this was immediately after re-vaccination in Paris.

1251. Then you think that re-vaccination would not produce liability after a certain time?—I would rather not give an opinion upon that without data.

1252. You said that children who are vaccinated are never well afterwards; is that consistent with your statement that the mortality among vaccinated people was less than among the unvaccinated?—Only in reference to small-pox. The mortality is not smaller on the whole, if it were we should have the bills of mortality lighter.

1253. Do you mean to say that nobody who is vaccinated is ever well afterwards?—I do not put it in that way, because very many are vaccinated, upon whose constitutions vaccination may have had no effect; but I say that it is hazardous to violate the lymphatic system by introducing this virus.

1254. Is it not the case that among the upper classes, for instance, everybody is vaccinated?—I think not everybody. I know very many who object to it; I know some Members of Parliament who themselves and their families are not vaccinated.

1255. Ninety-nine hundredths of the upper classes, I suppose, are vaccinated?—I do not think that they are.

1256. A very large majority, I suppose, are vaccinated amongst the higher classes?—Possibly so.

1257. Would you say that in their case it deteriorates their health during the whole of their lives?—Certainly. I do not say that they are more disposed to small-pox; but take them to the purlieus of Westminster, and then you will see the disposition come out.

1258. The statement is rather an alarming one; one would imagine that they would never know a day's health after vaccination; but is it not the fact that the vast majority of those who have been vaccinated are very strong healthy men afterwards during the whole of their lives?—I may state, in answer to that, that I am not singular in the opinion that a deterioration of the human family in this country is going on unceasingly, and that we have not the same stamina, and that we have not the strength which our forefathers had; you would not find men now who could draw the long-bow, and kill at 400 paces, which you found at the battle of Hastings, when the invader was met; you will not find the same strength in men, there is a deterioration. There is another fact in which I have been confirmed by three of the principal West End dentists, to whom I threw out the idea years ago, that after 25 years of age you will scarcely find a vaccinated young woman or young man without carious teeth. In a case which I saw yesterday, a lady had been re-vaccinated twice; she

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she is now losing the whole of her teeth, and she can attribute it to no other cause. It may appear trivial, but it is a very important question. If you deteriorate the system, you move the whole mass of blood, as John Hunter said; and, like the catalytic action in fermentation, you move the whole mass by the juxtaposition of this poison to the blood; you do not know what you do.

1259. With regard to the comparative strength of people, is it not a fact that people live to a greater age now than they did a generation or two ago?—No, I think it is not a fact, if you take the same districts; if you will take rural districts, it is not a fact; if you take town districts, it is a fact; it is not universally true. I have seen an analysis of that, though I cannot at this moment call to mind where that subject is handled.

1260. Taking the whole population of the kingdom, is not that so?—It depends upon when you make the contrast; I have looked at those tables in Dr. Simon's papers, or in Dr. Farr's reports. A comparison is drawn between the early part of the last century and the present, but that is not fair. The death-rate in this century, from 1838 (and Dr. Farr says, which we all know, that no statistics are reliable which were furnished prior to that) has gone on steadily increasing.

1261. Taking it more generally, is it not a fact that the actuaries of life insurance offices consider that the hazard is less than it was formerly?—Yes, because they took the Carlisle and Northampton tables formerly, which were made in their favour, at a time when those malignant diseases obtained.

1262. But still it is the fact, is it not, that it is considered now that those tables were much too favourable to the offices; that is to say, much too unfavourable to the general life of the people?—Precisely; but another 50 years will put the tables the other way, if vaccination is extended.

1263. As to the relative strength of ourselves and our ancestors, do you know that when some of those gentlemen who tilted at the Eglinton tournament tried to get into their ancestors' armour, it was found too narrow across the shoulders for them, and too small altogether?—Yes; so it is said.

1264. You gave evidence in answer to Questions 753 and 754, about syphilis, which is a very important point; and you stated that you thought that syphilis, in cases which you mentioned, must have been introduced by inoculation, because the parents had no syphilis?—Those were cases which I examined myself.

1265. A former witness stated that he considered that syphilis might lie dormant for a generation, and re-appear in the subsequent generation; is that your opinion?—That is my opinion; and very singularly, in a case of small-pox which I attended six weeks ago, a little girl was under my care, when an infant, with all the signs of syphilis. I particularly inquired of the mother whether she had ever been ill, and I sent for the father, who came to me; he is a very respectable man, and in fact a Christian preacher, and he declared that he and his wife were perfectly virtuous, that there was not the slightest indication of syphilis, but that his father was a *roué* of the first order, and that the child of his brother also, in the second generation, had manifested syphilitic signs. Four years afterwards, this child gets small-pox, not having been vaccinated, and recovers; but it is very singular that it should occur just at a moment when this question

arises. Like gout, it may pass over a generation; but I believe it is rare in syphilis.

1266. That being so, how could you tell from examination of the parents that the syphilis was introduced by vaccination; might it not have come from the previous generation?—I should infer it, from the extreme rarity with which it would it would pass over a generation.

1267. You would say that it was improbable, but not impossible?—It is improbable, but not impossible. I was practising then in a community where there was a very large proportion of working people, not the most cleanly nor the most moral, and my difficulty was to discover whether the lymph of the town was corrupt and corrupted in that way; and therefore I sent to London for a supply. In the country we exchange lymph very often; one may run out of it, and another lends him a few glasses. At that time I used to keep a pretty good stock, but I saw enough to attract my attention to the danger of transferring disease, when I did not myself believe in the possibility of it. Dr. Ballard has given evidence upon this subject, and he says that the true Jennerian vesicle cannot be distinguished from a vesicle containing syphilis.

1268. Then in that case of the people among whom you were practising, you having taken the trouble to get what may be called pure lymph from another place, would it not heighten the probability that the syphilis had been produced in a former generation?—It might have been so; but it is difficult to speak positively.

1269. I want to know how far you carry the theory of equality of the death-rate, whatever diseases are prevalent?—So far as zymotic diseases are concerned.

1270. Do you consider that the death-rate would be the same, whether there was treatment or not?—Certainly not. I say that in a given condition of society, under a given mode of treatment, if you do not have a certain number die of one disease, you will have a certain number die of another.

1271. Do you consider that treatment would reduce the whole mortality?—Certainly.

1272. You would not agree with the "Peculiar People," for instance?—Certainly not. Out of 89 cases of small-pox in one epidemic, I only lost two.

1273. You mentioned two years; the first year with an epidemic of scarlet fever, in which the mortality was higher than usual, and the next year with an epidemic of small-pox, in which the general mortality was lower than usual; might not the excess of the mortality of the former year account for the smaller mortality of the next year?—That I have answered, I think, by my reference the other day to the comparison between the cholera years and the years which preceded and not those which followed; I have endeavoured to account for it in the way you suggest, but I have failed; it follows a general law which I have worked out after years of inquiry.

1274. I suppose that an excess of mortality in one year would be likely to carry off the weaker portion of the population, so that you would expect a smaller mortality in the next year?—Yes, the mortality would be less in the next year.

1275. *Chairman.*] With respect to the case just now stated by you of a child having syphilis whose parents had had no taint of the kind; you

you said that she had never been vaccinated; have you not stated in another part of your evidence that vaccination produces syphilis?—Not necessarily.

1276. Did you not state that it has had that effect in some cases?—Yes.

1277. So that if that child had been vaccinated, it might probably have been used as an argument that vaccination had produced syphilis, might it not?—It might have been so if the inquiry had not proceeded further.

1278. But it shows you that syphilis may appear in a child whether unvaccinated or vaccinated?—If syphilis is congenital, it usually appears soon after birth; in the anus, for instance.

1279. It did appear in this child which was not vaccinated, did it not?—Yes, immediately.

1280. With respect to another remark which you made about the effect of vaccination, by which I presume you meant to show that it affected the teeth of the young people of the present day, you stated that you could not meet a young man or a young woman without them showing signs of decay in the teeth, and yet I understood you also to say that that was caused to some extent by vaccination; does that agree with your theory that one-half the population are unvaccinated?—Because I have distinguished between the vaccinated and the unvaccinated; I said that you would scarcely find a young man or a young woman of 25 years of age who has been vaccinated who has not carious teeth.

1281. Where did you get that evidence from?—From my own patients; all who have come to me. In the large dispensary practice which I had, I always had 200 and sometimes 250 patients a week.

1282. You only speak then of your own experience?—Of my own experience; but on referring the matter four or five years ago to several dentists at the West End, they confirmed it by their observation, and they say that in the vaccinated the front teeth especially go early in life.

1283. Do you not know whether the dentists have examined the patient to see whether they had been vaccinated?—No; but they have asked the question; I must leave wiser heads to judge whether the vaccination was successfully performed.

1284. With respect to syphilis, you say that it breaks out directly after birth, do you not?—Generally when hereditary.

1285. How do you account for its missing a generation?—It is one of the things which we cannot account for. Sir George Robinson, Baronet, a patient of mine, who is a martyr to the gout, says that his father had not the slightest trace of it, but his grandfather was a martyr to it; his children, the present Captain Robinson, who will succeed to the title and estates, and his little brother 12 years old, have shown signs of gout.

1286. In respect to the Highgate Hospital cases, I understand you to say that 2,825 of them, a large proportion were persons of above 15 years of age; if a large proportion of the cases occur in people above 15 years of age, would not that show that what I will call the theoretical protection which vaccination gives is worn out, and that the persons want to be re-vaccinated?—I know that that is one of the conclusions which has been already arrived at from observing the increased susceptibility after puberty to small-pox in the

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vaccinated; their “re-susceptibility” as it is called.

1287. Do not the statistics in Table 5, with respect to patients admitted to the Small-pox Hospital between 1836 and 1851, show a very small number of patients under the age of 15?—Yes; I think they do.

1288. Does not that appear to give some support to the doctrine that vaccination is a protection to the young?—It may be; I have admitted that before; and I have no objection to reiterate it here; it is possible that the disturbance of the lymphatic system in an infant may render it unsusceptible to small-pox.

1289. You also stated I understood, in reply to the honourable Member for Westminster, that of the cases sent to Highgate during those sixteen years, there were four who were vaccinated against one unvaccinated; is it really the case, if the figures which you give are correct, that the vaccinated are 3,094 and the unvaccinated are 2,654, or does it not show that instead of the proportions being four to one, the vaccinated are 54 per cent. and the unvaccinated 46 per cent.?—That is a Table for 16 years, in which period the proportion of vaccinated patients was gradually rising; I was speaking of the now existing condition in reference to the population; it was 81.1 per cent. in 1866, and since then it has become 84 per cent.

1290. You do not speak with reference to this table?—No; of the now existing proportions.

1291. I suppose that even if we admit that the cases are four to one of vaccinated to unvaccinated, you must admit also on your part that the deaths are very much greater among the unvaccinated cases than among the vaccinated cases?—Yes, that is so according to the returns, but there is no gain, because more die of those who are vaccinated than of those who are unvaccinated in proportion to the population.

1292. That is, supposing that your theory is correct, that one-half of the population is unvaccinated?—It is not mine, and it is not a theory; it is a computation given by Lord Robert Montagu.

1293. But you say that there are no data to depend upon?—No; not satisfactory data.

1294. Perhaps you do not know that the public vaccinations of England for the last several years have been above 60 per cent. of the births?—The proportion has varied from 62 to 91 per cent. since 1854.

1295. But during the last few years the returns show that they have been quite up to 60 per cent.?—Yes, over it; between 60 and 70 per cent.

1296. You stated that the returns with respect to the schools in London were only taken from a limited population, and that therefore they could not be much depended upon; have you ever seen any returns with reference to the recruits in London who were shown to be vaccinated or unvaccinated?—I have not seen them.

1297. If I could give you a return of the examination of recruits for the period from the year 1865 to the year 1868, would you say that that class of people who are recruited for the army were taken from a class who might be a very fair example of the state of vaccination amongst the people?—That depends upon whether they are picked up from rural or town populations. In some districts of England vaccination has been

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carried

Mr. C. T. carried out very extensively, and in others to a
 Pearce, M.D. very small extent indeed.

1298. Did you not say just now that vaccination
 was better carried out in London than in the
 country?—Yes.

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1299. Would not that be against your theory?
 —No; you must show where your recruits come
 from in order to get accurate returns.

1300. The returns show that there were 91·5
 per cent. of the recruits between 1865 and 1868
 with marks of vaccination, 6 per cent. showing
 marks of small-pox, and 2·5 per cent. showing no
 marks of either; the recruits being generally
 taken from the lower classes, would it not appear
 that vaccination is much more generally carried
 out than you stated?—If that is the return, I
 think it bears out what I said, that they are
 better vaccinated in London than in the country.

1301. Is it your opinion that recruits are much
 taken from the London population, or is it not the
 case that generally speaking the London popu-
 lation are rather too small in stature?—Yes, they
 are, but the recent enlistments have been taken
 from London to a very great extent in con-
 sequence of the want of employment.

1302. Dr. *Lyon Playfair*.] With regard to
 erysipelas, are you aware that at page 238 of the
 30th Report of the Registrar General, the follow-
 ing figures occur from 1850 to 1854; the deaths

from erysipelas to one million of the population
 were 111·6; from 1855 to 1859, the deaths in a
 million of the population were 104·6; from 1860
 to 1864 they were 87 per million; and in the
 year 1867 they were 68 per million?—I will
 refer to that return.

1303. Mr. *Taylor*.] There is one thing which
 I do not think we clearly understand; you used
 the argument (and it is a very striking one) in re-
 ference to the non-advantage of vaccination and
 so forth, that death would have its demands, and
 that if people did not die of one disease they would
 die of another; you have modified that statement
 in answer to various questions; how would you
 restate it, because if it only comes to this, that
 under given conditions with a given amount of
 disease and a given amount of care and treatment
 and sanitary conditions, a certain number would
 die, it is a mere truism which I am sure you
 would not give us as evidence?—I mean that
 exactly, but I mean something more in another
 sense, that you have no business to let such a
 condition of things remain; that instead of that
 condition remaining you ought to adopt sanitary
 measures to prevent all this great mortality; but
 while those conditions remain you will have that
 mortality from one cause or the other.

1304. You do not wish to amend your state-
 ment in any way?—No.

Tuesday, 14th March 1871.

MEMBERS PRESENT.

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Mr. William Edward Forster.
Mr. Hibbert.

Mr. Holt.
Lord Robert Montagu
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, ESQ., IN THE CHAIR.

Mr. JAMES JOHN GARTH WILKINSON, M.D., called in; and Examined.

1305. *Chairman.*] ARE you in practice either as surgeon or physician?—I am in practice as a homœopathic physician.

1306. Where do you practise?—At 76, Wimpole-street, London.

1307. Do you wish to offer evidence, from actual observation, with respect to the evil effects arising from vaccination?—I do.

1308. Will you state shortly what are the evil consequences which you say result from vaccination?—I think the best answer which I can make to that is to give, very shortly, a few cases, all of which have occurred under my own observation. The first case that I will mention occurred on the 27th of February last, in my dispensary practice. A poor woman, of the name of Twine, brought her baby to me; I said, "What is the matter?" She said "My child was vaccinated last September; he was a fat, strong boy till he was done; he has never been well since; he is wasting away; his arm never got well." I examined, and saw that this was the case. There was one mark unhealed on the arm, which had been there since last September; another, almost exactly like it, on the neck, and a third on the left side of the forehead; this I saw. She then went on to say, "There could not be a stronger child than this was before; three days after vaccination he came out with something which the doctor said had nothing to do with vaccination." She is now being summoned to have a second baby done.

1309. What age was that child?—I suppose about 10 months; I do not know, but I presume that the vaccination was performed within the first three months, and it was performed last September. The vaccinated child died on the night of the 10th instant, four days ago, of convulsions. A point which I should very much like to notice is, that a gentleman in my neighbourhood, a very respectable man, who attended the child, gave a certificate of death: "Died of congestion of the brain during teething." Had I given the certificate of death I should have said: "Died of convulsions in consequence of nervous irritation and inanition caused by mesenteric disease, caused directly by vaccination-lymphatic disease." The case has two points in it which bear upon this question; one is that the doctor who was attending the child said of the eruption which

came out three days after vaccination, that it had nothing to do with vaccination. The child was brought to me, as children often are who go out of the ordinary way, and nothing does them any good. I asked: "Is Mr. Brittan aware of this child's injury from vaccination?" She said: "No, he is very cross if vaccination is mentioned; I dare not mention it to him." The other point is that looking at the case from two different points of view one would have had a totally different result given; I should have given it from vaccination; he gave it from teething. That bears in an important manner upon a paragraph which I read in the "Times" the other day concerning the Scotch Registrar General's Report. He says (no doubt very truly) that out of 100,000 vaccinations there are only two recorded cases of death from vaccination. There are more than two; but I shall not dwell upon the statistics because it is not in my line. No doubt it is true that only two are recorded, but if medical eyes had been turned the other way in the direction which mine take there might have been a great many more recorded. This death was not recorded as a death by vaccination; but I maintain that it was simply death by vaccination.

1310. Do you wish to state it was your opinion that this child on the 10th of March died, the direct cause being vaccination, it having been vaccinated in September last?—Certainly I do; it came to me on the 27th of February last, having been vaccinated in September.

1311. Did you see that child more than once?—I saw the child twice; I found the child in an emaciated condition, and I took the mother's account that the child had been perfectly well. I dealt with it as I would with any other case.

1312. When did you see it the second time?—Two or three days afterwards. I cannot recollect the day.

1313. That would be not very long before the death, I presume?—Perhaps about nine days before the death. I thought the child would die; it was passing into a state of atrophy, and I regarded what the doctor called congestion of the brain as simply convulsions, which often come from atrophy and irritation in the bowels.

1314. Is there any other case that has come under your observation which you wish to state?—A case occurred about 10 years ago, but I

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do not remember the precise date. My coachman's child was vaccinated and took erysipelas, which overspread the child's body. The mother who was nursing it took erysipelas, and both of them nearly died of this erysipelas.

1315. How soon was that after vaccination?—It came on concurrently with the vaccination.

1316. What age was this child?—I do not remember; it is 10 years ago; and at the time I took no special interest in the case, but I recollected it sharply afterwards, simply in conjunction with vaccination.

1317. Had the mother been vaccinated?—The mother had been inoculated and had had small-pox. It was an Essex family, where I suppose inoculation lingered longer than in other places.

1318. Is there any other case that you wish to mention?—The third case which came under my knowledge was that of Miss Edith Hutchinson, of Kensington, who was vaccinated by Dr. Joseph Laurie.

1319. How long is that ago?—I suppose it was about five years ago, but I have not the dates. The arm swelled enormously, and was hard like board. After a month the swelling subsided, and then a putrid thrush occurred, which disappeared after some weeks. The disease was next transferred to the abdomen and its lymphatic system, and the patient died of great purulent collections in the cellular tissues, the matter voided by the bowels.

1320. How often did you see this case?—I saw it twice; I attended the latter stages of the case with Dr. Laurie.

1321. Mr. *Candlish*.] What age was she?—She was five or six; I do not know more nearly.

1322. *Chairman*.] When had she been vaccinated?—Her mother's letter is as follows: "The child was in perfect health in May 1863. As small-pox was prevalent, and the household was being vaccinated, she was subjected to the process, though she had been vaccinated well when four months old. Within a few days of the vaccination in May 1863 she, being then nearly six years old, was attacked with inflammation of the lymphatic glands of the arms to so severe an extent that her arms were immensely swollen, so heavy and hard that each arm had to be supported on pillows. Her sufferings for 10 days were very great, at the end of which time her arms gradually resumed their natural appearance. Within a few weeks she was prostrated by an attack of aphthous ulceration of the mouth, most distressing from the offensive odour emitted from the gums. She was more or less delicate ever after, and in the following June enlargement of the abdominal glands and mesenteric disease set in, her life being terminated by a succession of abscesses in the bowels, in July 1864."

1323. Mr. *Candlish*.] That is rather the language of a professional man than of the mother of a child, is it not?—Probably; but when a mother has lost a child, she has talked over it with so many medical men that she acquires a professional expression about it.

1324. Lord *Robert Montagu*.] Was she a poor woman?—No; her husband is the head clerk at Baring's.

1325. *Chairman*.] Was this letter sent to you?—This letter was sent to me on my request the other day. I saw the child twice in consultation.

1326. How do you connect those diseases which you have described in that case with the vaccination?—In this way; in the first place, there is the vaccination itself, there is poisonous lymph, producing poisonous lymph, that is diseased lymph; in the second place, there is enormous swelling of the cellular tissues, and consequently of all the tissues of the arm. The cellular tissues are, in fact, the great plane at the base of the whole lymphatic system, the universal lymph plane. The next stage, the malignant thrush was no doubt a commencement of destruction in the lymphatic system of the abdomen. Affections of the mouth and all those parts are very often nothing more than symptoms of what is going on in the liver, or the stomach, or the smaller intestines, and so forth; and I apprehend that the thrush was the beginning of a manifestation of a break up in the lymphatics. In the fourth place, the centre of the vaccination was reached, and the abscesses in the abdomen were the end of it. I believe that if medical men were more to study the connections of the body, and particularly the great tracts through which the lymph circulates, they would get very different ideas of vaccination from what they have now. Professor Huxley in his ideas about protoplasm, and so on, has shown that those great tidal fluids of the body permeate everything, and they carry diseases where they go. The cellular tissue, which is proximately affected by vaccination, is the largest and grossest area for the transmission of fluids, and for the transmission and transference of diseases.

1327. Have you any further case which you wish to bring forward?—The next case which I would refer to, is a case in the house of the Rev. Dr. L——, of Regent's Park, who is a Dissenting clergyman of great eminence. I attended his daughter for small-pox last autumn, and Mrs. L—— asked me to vaccinate the family; I declined to do so, and I gave my reasons for so declining; Dr. L—— expressed his surprise that I would not vaccinate the family, but Mrs. L—— said she was glad to hear me say that, and added, "Do you not know that our eldest son has a scrofulous swelling of the arm from vaccination, and has never been well since?" He remembered it, and I examined the son, and verified the fact of the disease, which came on by their allegation immediately after vaccination. One point which struck me about that was, that the vaccination power as I will call it, in the medical mind, and in the public mind too, has got to be so strong, that whatever occurs in connection with it is soon swept away by the tradition and prestige now existing as to vaccination. If vaccination had lasted a thousand years, it could hardly have got a greater hold than it has; it is like the laws of the Medes and Persians, and this gentleman had actually forgotten what he had believed at the time to be a fact, being no doubt carried away by the flood of the orthodoxy of vaccination.

1328. With respect to this case, all that you state is that the mother of Mr. L—— stated that the scrofulous swellings broke out after vaccination in the child; do you wish to draw any inference from that?—I think it highly probable that vaccination was the cause of this complaint in a person liable to scrofula; I think it highly probable that it would cause periostitis. From the connection between the cellular tissues and the whole of the great nutritive functions, vaccination

nation would so throw down the system, that any disease to which he was liable might supervene.

1329. Does not such disease exist in the case of persons who have not been vaccinated?—Yes, and for that very reason it is that vaccination evokes these things. They are all ready to come upon the scene, and any blood-poison will do it.

1330. What is the next case which you wish to mention?—The next case which I wish to mention, is that of a very eminent, literary man, who is known to everybody in Parliament, but I cannot mention his name because he asked me not to do so. He consulted me last autumn for an affection of the leg, with a skin eruption, which crippled him very much. His account was: "Four years ago I was over-persuaded by a lady to be vaccinated, and I have had this affection ever since." He showed it to his surgeon, who pronounced it to be gout, and did not admit its connection with vaccination at all. To me it had no necessary reference to gout, and it might most easily have been caused by vaccination affecting the cellular tissues and the skin.

1331. In your opinion what was the disease?—It was a kind of eczema of the leg; but evidently the disease permeated all the tissues, and lamed him. His leg was swollen, and he was confined a good deal to the sofa.

1332. You saw him four years afterwards?—I saw him four years after vaccination, and he told me that for the last four years since he was vaccinated, he, not having had anything of the kind, as far as I recollect, before, had had this affection. It was just a lymphatic transference exceedingly likely to happen. What struck me about the case was, that this very eminent surgeon, perhaps the most eminent surgeon in London at present, should have been able to say *post hoc ergo non propter hoc* against this gentleman's assertion that the vaccination happened one week and that this thing came on shortly afterwards; and yet that he should be able to hold the *post hoc ergo propter hoc* with regard to the whole class of facts, evidently of an intangible nature, of vaccination preventing small-pox.

1333. Is there any further case which you would wish to mention to the Committee?—No. I have only to state generally, that since I have inquired into the subject I have often heard parents say, "My children have never been the same since they were vaccinated"; hardly a day passes now, if I inquire, without my eliciting that phrase in almost the same words. I have had other cases occur to me, but I have not any notes of them, and I have no further cases which have occurred personally to me within the time that I have been an inquirer into vaccination.

1334. You say that in your opinion the evil consequences of vaccination are wide-spread and very serious to the community; upon what do you ground that opinion?—I have that opinion, because having made these few inquiries within the last three years I have elicited these facts, and partly seen them; and I argue that if other medical men were to do the same, and if their convictions were to gradually sway round against vaccination, as I believe they will do, the cases which would crop up would be something enormous. I have seen four such cases, I will say, and if the 30,000 medical men in this country were each to see four, or three (as they would sometimes interlock), that would be 90,000 bad cases. Now, if there are 90,000 bad cases manifest, in which some visible mark and symptom

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attest mischief, it is quite evident that you have here a poison which may be doing all kinds of invisible mischief not alleged or accounted for, and therefore it is upon that ground that I would base my convictions, which have just been given, that vaccination is seriously at war with the health of the people.

1335. But have you any right to presume that because four bad cases have been brought to you, four bad cases may have come under the observation of every medical man in the country?—I only presumed upon three, and as I have not gone out of my way for them it seems to me that they are common.

1336. Would it not be the case that, it being known publicly that you have a strong feeling against vaccination, persons would be likely to bring such cases to you?—Not at all; not one of those cases came to me on that ground, excepting perhaps the first baby.

1337. Do you wish to make any observations about the statistics of the question?—I wish to say that there are, accounting for small-pox deaths, several very common causes which are not sufficiently admitted. It seems to me that if you were to say other things of the deaths of the unvaccinated they would be just as feasible, and express causation far more strongly. If you said that the poorest and most wretched, and filthy and vicious people, died of small-pox, you would express the truth, just in the same way as if you said that the unvaccinated died of small-pox. It is the abysses of great towns, and the miserable undrained cottages, where the people live upon the ground, although they are in the cottage in which fever and small-pox and all those things are rife.

1338. But in the better-to-do classes, is not the fatality from small-pox greater amongst those who have not been vaccinated than amongst those who have been vaccinated?—That is a moot point. Last week but one the difference was very slight indeed in the Registrar General's Returns; 80 vaccinated persons had died, against 117 unvaccinated, and 20 were unaccounted for, which might bring up the number of vaccinated deaths to nearly 100. Besides that, it seems to be reasonable to suppose that a statistic collected by one side would have very much the same bias towards that side that an election conducted under a Government would have in favour of that Government. Supposing that the pro-vaccination side collected the statistic, without imputing the least dishonesty, but merely taking into consideration the powerful bias of the mind, that statistic would be a very different thing, I apprehend, from a statistic collected by Mr. Gibbs and the Anti-vaccination League.

1339. But you cannot suppose that the officials of the Small-pox Hospitals have any interest in stating what is not true?—Not the least interest in stating what is not true, but every interest in stating what makes for their side. This vaccination question is a question which looks very cool when it is drawn out in tables of statistics, but it is an intensely hot question, and a great deal of passion goes into the statistics on both sides. No doubt in the Small-pox Hospitals there is a great deal of care, but still, from the way in which the statistics have been handled, it is exceedingly obvious that there is a powerful bias to keep up vaccination.

1340. But what interest can bias the minds of the officials of the Small-pox Hospitals?—The entire

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entire medical profession has a most powerful interest, a very powerful class interest, and the officials of the Small-pox Hospitals are the advanced guard of the medical profession upon this particular question. The medical profession has, in the first place, the honourable interest of not liking to be proved to be utterly wrong upon a matter as to which it has so very assiduously waited upon the public as it has with regard to vaccination; and, in the second place, it has a very powerful interest reigning with all of us of a pecuniary kind. A good small-pox panic undoubtedly makes one or two millions of money flow into the pockets of the medical profession. One man in my neighbourhood boasts that he is making 60 guineas a week by vaccinating.

1341. Is he a public vaccinator?—No. I, myself, have within the last four weeks declined to vaccinate 30 families. If, happily for my pocket, I had been able to do so, and had also gone round and said to people “Are you not afraid? you ought to be vaccinated,” and so on, I might very easily have put 100 guineas into my pocket. These are very powerful motives with the medical profession; they are, of course, unknown motives, but the endowment and establishment of vaccination, and the immense public property that it is, cannot be otherwise than a strong vested interest, and have all the passions of a vested interest enlisted upon its side.

1342. But if what you state is the fact (and no doubt it is true), does not that show that the public have the very greatest reliance upon the effects of vaccination?—Of course it does, and if the public was a very good judge on all those matters, if majorities were what they will be in coming years, it would be a very good argument; but there is one part of the public which has not the same faith in vaccination, perhaps because they do not care so much about their bodies, but also because they see more of the mischief of vaccination. The poor, the people who live in bad neighbourhoods, and are liable to be the prey of disease, are not to the same extent in favour of vaccination; that poor woman who came to me the other day said to me, “Sir, you little know what a scourge vaccination is in the homes of the poor;” so that it is the working classes which will render it impossible, I believe, for Parliament to carry these things forward, because the poor suffer more than the other classes. Let it be granted for a moment that vaccination is an evil instead of a good, and then it will readily be admitted that vaccinating Whitechapel is a far more serious affair than vaccinating Belgravia, because in Whitechapel you have all the causes which will make a pin-scratch into, perhaps, a festering serious affair, whereas in the other case you have light and air, and sunshine, and good food, and all the causes which build up health, and make the body resistant against the effects of blood-poisoning.

1343. But is it not the fact, that in those bad neighbourhoods if people are not vaccinated they suffer immensely from the effects of small-pox, and that the fatality is very great?—Of course, and so they also suffer immensely from cholera, and from any epidemic disease or any zymotic disease; it is not at all peculiar to vaccination. I attribute the fact that the unvaccinated die more (if they do so), and have small-pox very severely, to the fact that the unvaccinated are the poor, the wretched, the needy, the unclothed, and the vicious; I believe that if those great causes

were worked they would account for the entire thing, without any statistics at all.

1344. Do you dispute the fact that vaccination has anything to do with rendering the disease more mild in modern times, or with the immunity of faces in our day from pock-marks?—There are very great causes coincident with vaccination which enter into the case; in the first place, nearly all the great diseases get milder, and tend in their nature to pass away; and in the second place, the difference of treatment will account for a great deal. In the old days, fresh air and water, and light, and generous treatment of all kinds, were all of them reckoned to be destructive in the treatment of small-pox; now they are reckoned to be the causes by which small-pox is rendered comparatively mild. There has been a total difference of treatment; I recollect that Dr. Carpue told me a story which illustrates briefly the difference of treatment. A man died (as it was thought) of small-pox, and he was taken from his bed, where he had been curtained up, and from his hot room, and laid in the summer house at the end of the garden; the stench was so intolerable that they did not like to go near him, but when they came upon him the next day, they found him up; fresh air had done it all.

* 1345. If your opinion is that all diseases have become milder in modern times, do you agree in the statement that vaccination has the effect of rendering an attack of small-pox less hurtful when it occurs?—I have not made up my mind about it; I have not had sufficient evidence. It appears to me that the position is being gradually assailed, and perhaps shaken; but I have not made up my mind about it.

1346. You would not say that it had no effect?—I would not; I do not think it likely that it has no effect.

1347. Do you consider it to be at all protective?—Perhaps it is; I do not know; I only know that if I had a young family of children, I should pay perpetual fines rather than have them vaccinated.

1348. Mr. Candlish.] As long as your money lasted?—As long as my money lasted.

1349. What would you do then?—Then I should go to gaol, at least I hope I should; I should be a bad father and a base man if I did not with my beliefs.

1350. Chairman.] You say that you consider that the carrying of people from Whitechapel to the Hampstead and Highgate hospitals propagates disease and increases the death-rate; what is your reason for that statement?—One reason is, that if you have a small-pox patient confined in a room in Whitechapel, and have a nurse attending there, you have only a few cubic yards, at all events, of small-pox atmosphere; but if you take him in an open ambulance (as I hear they have done) to the Hampstead Hospital, you take him through five or six miles of air, and he will contaminate it all the way that he goes.

1351. Do you not believe then in the principle of isolation, or the separating of patients who are attacked with small-pox from the remainder of the persons living in the same house as a means of preventing infection?—The best way to separate them would be to clear the neighbourhood from around them.

1352. If you did that, what would you do with the people whom you cleared away?—In good

good houses it is very common for families to go away.

1353. But I am speaking of the very poor neighbourhoods, such as you have mentioned?—I have no detailed plan; but I think that that comes into a much larger subject, which is, that you can never stamp out those diseases, and never really approach them, unless the municipalities take great steps for doing away with those vile neighbourhoods. I do not believe that you can tackle those questions, and still have the slums of London unreformed; but at present I should leave the people where they are, and isolate them to one room. The present mode is not isolation, but the dropping of infection along miles of streetway, and the congregation of the pestilence in the great focuses of small-pox hospitals. And the movement of the bad cases notoriously increases the death-rate.

1354. How would it be possible in those overcrowded houses to isolate patients attacked with small-pox from the remainder of the family?—The only way would be forcibly to remove the other people. Of course those things are matters of great study and detail, and I have no plan; but I simply see that the carrying of them through other neighbourhoods up to places like Hampstead and Highgate is very deleterious, and very offensive. I have patients in that neighbourhood, and they tell me that their nurses and children have to run for it when they see a small-pox patient coming.

1355. Have any great number of people in that neighbourhood, or anywhere near the hospitals, been affected with small-pox?—I have heard so; my patients have told me so, but I have not attended any of them, and I do not know it except by hearsay; they say that it has been very rife in the good roads about Haverstock-hill.

1356. You state that medical men also carry it about and become wide infectors?—They do; I do not know whether I am in order in stating that I have myself treated small-pox for several years by a plan which would very much moderate and mitigate the evil of the disease. It is a plan of local treatment, and this plan of treatment is so easy that it could be communicated to nurses, and in that way there might be a medical centre in the neighbourhood, and a system of a head nurse and subordinate but educated nurses who would be able to treat the whole of the cases without medical men.

1357. Have you tried your system with any success?—With great success, as far as my experience has gone. I have very little poor practice now, and consequently I have not many cases of small-pox; but I have cases of small-pox every now and then, some very severe and some mild, and I have tried it with unvarying success, and I believe, if it were looked into (I will not say adopted), it would be of great good in the treatment of small-pox. Owing to the extreme easiness of the plan, I have been applied to by fathers and husbands who have got my directions on a page of a sheet of note-paper, and have employed the remedies with complete success; I have never known a case of failure. One clergyman wrote to me, about the year 1866, to say that he had treated all the small-pox cases in his parish, where an epidemic was raging, with that system, and he had not lost a case, and there had been very little pitting or disfigurement. The remedies

which I have used are the *hydrastis canadensis* and the *veratrum viride*. The *veratrum* is well known to the medical profession. Those are two American herbs, and I have used them locally chiefly. The *hydrastis canadensis* is a drug which has a great power, as I reckon, over the specific nature of small-pox. The *veratrum viride* has a great and a very complete power of arresting the inflammatory symptoms which accompany the development of the pustules of small-pox.

1358. How are the medicines used?—In this way. Those are what would be called fluid extracts, the strongest juices of the plants. I use a teaspoonful of each of them mixed together in a tumbler of water, and applied over the whole face, and over the whole eruption, and this is kept on, when the eruption is very bad, by cloths all over the face, and it has the effect of abolishing the erysipelatous inflammation accompanying small-pox, and leaving merely the pustules, without any swelling of the skin beside them, in the course of from 12 to 36 hours. When the inflammation goes away I then leave out the *veratrum viride*, because it is very depressing, its application locally is almost like blood-letting; a bath of it will cause enormous perspirations. I should also, in cases where the strength was equal to it, order baths of those two extracts, perhaps a tablespoonful of each mixed in the bath.

1359. Dr. Brewer.] Is it the hellebore?—It is the green hellebore; it is in use as an antiphlogistic.

1360. Chairman.] Then does the treatment consist entirely of external remedies?—No; I give a drop of those remedies in a tablespoonful of water, either combined or separately, as you like, every three or four hours, so as to exhibit the remedy internally, as well as externally. That is the chief treatment, and it has been wonderfully successful.

1361. Can you state in what number of cases you have applied that treatment?—I do not suppose that I have had more than a dozen, but I have had some very bad cases, several of them being cases of severe confluent small-pox.

1362. Lord R. Montagu.] Did you discover this remedy yourself?—I only discovered its application to small-pox. I think I was the first. I never heard either of *veratrum* or *hydrastis* being used locally in that way.

1363. You have only tried it on 12 cases, have you?—Probably that; but I have recommended it to a number, and it is well known. I have written a small book upon the subject of what I call the "Cure, Arrest, and Isolation of Small-pox." These are the results which I have attained. The disease has been abridged in duration. In the first severe confluent case, to which I was not called until the neck and face were one continuous pustule, and the head swollen hugely, the symptoms were over in a week, and on the 11th day the mask of scab had separated, and my patient was out in Kensington Gardens. 2. The inflammation and primary fever are certainly and speedily subdued. 3. The pustulation is arrested and the secondary fever annulled. 4. There is no itching of the pustules, and the patient has no motive to pick the face. 5. There is scarcely any pitting, and no seaming, even where the face has been one bag of matter. 6. The stench of the old disease has no place. 7. The suffering is reduced to a minimum. The phrase "isolation of the disease" is a supposition that I make from the entire absence of smell, even in dreadful cases, and

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1364. *Chairman.*] Do you mean that in cases where you have had small-pox patients you have never known any other persons in the same house to be attacked with the disease?—I ought to modify that. In the case of Dr. L—, a servant of his, who had very bad lupus in the face, took the small-pox, and she went to the Small-pox Hospital, and there died of it. I did not attend her. That is a modification of my statement. I have thought that if nurses were properly instructed in this treatment, they might be with the patients without moving about, and that in that way a medical man might be a good deal emancipated from cases in which he is very likely to bring disease away with him. There is another drug which is almost omnipotent in erysipelas, and I think would be so in small-pox, it is the sulphite of soda, locally applied in the same way.

1365. Why do you state that you consider that the Vaccination Act, if carried out in its entirety, is more severe against the poorer classes than against the richer class?—Because, as one Honourable Member said, when the purse is not there the gaol is. If I were called upon to have a child vaccinated now, I could, to a certain extent, pay fines once a fortnight; but a poor man cannot pay fines at all, and therefore, he has to go to gaol at once. The law is quite unequal in what it does. Moreover, the conditions of poverty are much more liable to be followed, I hold, by evil effects from vaccination than the conditions of people who live in healthy houses, and under healthy circumstances.

1366. But the result, with respect to fines, would be the same in almost the whole of our laws; your argument would apply to every case where a person is fined for any offence, and it does not only apply to the Vaccination Act; is not that so?—I do not know; I am not a lawyer.

1367. You wish to state something with regard to the Parliamentary Grant for vaccination; in what way do you connect that with the consideration of this question?—In this way: the grant to Dr. Jenner of 30,000*l.* was a grant of the most reputedly practical body of legislators in the world, and it gave Jenner and vaccination immediately a very great status in the world. That grant, I take it, was the first powerful cause of vaccination being adopted in all the countries of the world, and it has been the cause of Act after Act of Parliament. It, therefore, has endowed and established vaccination. In Jenner vaccination was endowed and established, and in proportion as that was the case, all the interests of the profession went with vaccination. That is not the frame of mind in which investigation takes place afterwards. As soon as ever endowment and establishment come in, all the things as against which the endowment and establishment are made, become dissent and are tabooed by the great and powerful bodies which are inside the privileges.

1368. But would it not rather be the fact that Act after Act has been passed to make the vaccination more general, and to make it compulsory, owing to the circumstance that the more people have been vaccinated, and the more thoroughly vaccination has been carried out, the less fatality has occurred from small-pox?—That, of course, is the very point; but the whole of that argu-

ment proceeds upon the *post hoc ergo propter hoc*, and altogether overlooks the fact that those diseases are getting milder, and that they are continually better treated, and also the fact that when epidemics occur the result is hardly of the nature which you have indicated. For instance, the week before last the fatality of vaccinated cases was very considerable.

1369. Of course in stating that the fatality of vaccinated cases was considerable, there is no doubt that some explanation may be given as to the age at which those cases occurred; are you able to give any evidence with respect to that?—I am not.

1370. I suppose you are aware that in the returns which have been given from the Small-pox Hospitals, it appears that the greatest number of deaths occur at the higher ages between 15 and 30?—I am aware of that.

1371. And that a very few deaths occur at the younger ages?—Yes.

1372. In fact, very few cases, I believe, occur at those ages?—Yes, and that is attributed to the prevention by vaccination.

1373. Does that not rather show that vaccination is a protection to the young?—Probably it does, but then (not to cover ground which has been so well gone over) it also appears from Dr. Farr's reports, that the whole death-rate is not diminished by it, but that other diseases step up and claim what small-pox does not take. There is no diminution of the death-rate; the only good that I can clearly see attributable to vaccination is that it diminishes the ugliness-rate of our people, or it is said to do so. I meant to say that there are fewer persons who have pitted faces and unseemly countenances.

1374. You admit that it does go to that extent?—I do not know that it does, because it appears to me that the total difference of the treatment, and the mildening of the disease, will account for it.

1375. You say that you do not agree that vaccination will stamp out small-pox; what is your idea as to the best plan of stamping out small-pox?—My idea is that all the zymotic diseases must be stamped out together; the rebuilding of towns by some compulsory Parliamentary enactment, which for instance would overhaul whole neighbourhoods, and build them either upon the Peabody scale, or some other scale, is the only thing. It is quite obvious, if you take a town like London, that the neighbourhoods of it could be so built up with houses of good construction in model lodging-houses as to leave open spaces between, and to provide for sanitary arrangements all through; and that as Parliament is occasionally voting compulsory laws, there would be nothing out of the course of legislation in compelling those neighbourhoods to be rebuilt, or in giving municipalities the power of rebuilding them.

1376. Are you not aware that they already have the power under an Act called "Mr. Torrens' Act"?—Yes, I know that they have it, but they have not done the deed.

1377. How would you house the people during the time that this process of rebuilding the large towns was going on?—I do not think that the process, according to present appearances, would be so rapid that more perhaps than a few thousand people would be displaced at once, and it would be very easy to shelter them. Besides, whilst the railroads have been making enormous razzias on the people,

people, that question has never been asked, so that I do not see why it should have to be settled first here.

1378. I suppose you admit that small-pox does occur in a great number of cases in country districts where there is fresh air and good water, and where everything is done for the health of the people?—Yes, and the fact of infection goes on; very bad constitutions often exist in the country, but still is it not true that the main decimation from all those diseases does take place in very bad neighbourhoods in the lowest state of society. Moreover, often, country villages are mere slums, and want of drainage and of sanitary building makes them into worse zymotic nests than the slums of great towns.

1379. Lord R. Montagu] In the first case which you mentioned, you said that the doctor had said that small-pox had nothing to do with vaccination, and that he had given a certificate that the child had died of congestion of the brain during teething; I believe that that is a common mode of death among infants, whether they are vaccinated or not, is it not?—Yes, it is not uncommon.

1380. But you said that if you had certified the cause, you would have said that the cause of death was congestion of the brain, caused by nervous irritation, caused by atrophy or inanition, which was caused by mesenteric disease, which was caused by vaccination?—Yes, I did.

1381. Then you there affirm a string of five causes and effects, do you not?—I only admit one cause, which is vaccination; in the human body it is not at all uncommon for a morbid cause to go through organ after organ, and it is not that there are five causes, but simply that it is the transference of a disease to an ulterior stage. For instance, most diseases have several stages. Here I apprehend that the vaccination disease was the first stage; that the eruption was a second stage; mesenteric disease the third stage; absence of nutrition, atrophy, the fourth; and convulsions from inanition and irritation, and death, the fifth. The cause was one; the fields of organs which it traversed, manifold.

1382. Had you vaccinated the child of whom we are speaking?—No, I never vaccinate.

1383. Then how do you refer the death of the child through all those causes up to what you would call the primary cause, namely, vaccination?—Because the mother told me that the child was perfectly well until it was vaccinated; stout, plump, and hearty; three days afterwards an eruption came on, which is a very common thing, and the child dwindled from that time.

1384. Then, even supposing that the mother was right in what she told you, would it not have been merely a case of *post hoc ergo propter hoc*, or did you take pains to link them all together in the relation of causes and effects?—I did take great pains to link the two together in the relation of cause and effect; and it seems to me that all our scientific knowledge is to a great extent *post hoc ergo propter hoc* in medicine; but the sequence in some cases is manifest and strong, whereas, in other cases, it is exceedingly intangible, and, so to speak, weak. If a person who has been vaccinated tells me that three days afterwards an eruption came on, and that he has never been well since, I apprehend that the connection there of cause and consequence is an extremely strong one; it is a visible connection. If a person who has been vaccinated says to me, "Look here; I

have been vaccinated, and I never had the small-pox, and therefore this is due to vaccination," there the connection is, in common sense, nil; it is intangible. There may be such a connection, but it is in the region of subtleties.

1385. You mean that the connection between the alleged cause and the effect is probable in the first of the two cases which you have just put, but you would not say, I presume, that it is certain?—It would not be certain in a single case, but if you could have a thousand cases of a similar kind, and if in all of them some disease of the nutrition of the body was a consequence, all that, I think, would very strongly establish that vaccination does strike the great nutritive centres of the body and the lymphatic system. Case after case would build up what was at first a mere thread of suspicion into a powerful rope of causation and of inference.

1386. What you mean, I suppose, is this: that if in the antecedent there is always some particular factor present; and if in the greatest possible variety of consequences or facts which follow, there is always some one and identical factor present; and if, on the other hand, when the first factor is taken from the antecedent, all the variety of consequences have not that consequent factor; then you would refer the one factor to the other as cause and effect?—To be very candid, I have not any metaphysics in me this morning, and I have not followed the question.

1387. Have you read John Stuart Mill's logic, because you will find such a proposition explained there?—I have not.

1388. With regard to what the mother said, is it not possible that a disease may be in the blood, and yet an unpractised eye might not detect it?—Certainly that does happen continually.

1389. Then, in the case of the child of whom we are speaking, may not this atrophy or mesenteric disease have been there working, and yet the mother not have been aware of it; and when she told you that the child was healthy beforehand, might it not, in reality, have had this disease, only she had not observed it?—Yes; but I see no reason to suppose it; and that case was somewhat clenched to my mind by the fact that the spot had never healed, and that a similar one had come out on the neck and another one on the left side of the forehead; I could not help seeing that there was something persistent in the action of the vaccination indicated by that.

1390. It is possible, is it not, that the child was in such a state of health that any wound which it might have received would not have healed; yet that the mother, being unpractised, would not have noticed that the child had any hidden disease?—I do not see any reason to suppose, against the broad fact of an immediate sequence, that the child was ill when it did not look ill.

1391. There are then two ways in which certainty is taken away from the conclusion which you have stated, are there not?—There is only one way in which a mother would take it. A logician might take it in another way.

1392. You referred, in speaking of that case, to the statement of the Registrar General of Scotland, which appeared in the "Times" the other day; and you said that although there were only two deaths in 100,000 from small-pox, after or in consequence of vaccination, yet, that if doctors had looked with another eye, they would have recorded many more?—I said they might.

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1393. Still, it is an indisputable fact that there were only 15 deaths from small-pox in Scotland during that year, is it not?—Yes, probably.

1394. And before the Compulsory Vaccination Act passed, I believe there were 2,000 deaths from small-pox every year?—Very likely.

1395. Would you not say that it follows from that, that vaccination had prevented small-pox?—I cannot think that, or that anyone would long maintain it, because cholera and all those diseases have been subject to precisely the same ups and downs without any procedure at all.

1396. Are you aware that the same phenomenon occurred in Ireland after the passing of the Compulsory Vaccination Act in Ireland?—Yes, I am quite aware that that is stated.

1397. Are you aware that the same effects have followed from compulsory vaccination abroad?—I am not aware of that. Sweden is a very notorious case the other way. In 1846 (I think) there were only two deaths; they gradually rose in three or four years to between 2,000 and 3,000. Every other disease appears to follow the same course of attacks and declines.

1398. Because in those two countries of which we are more especially cognizant, namely, Scotland and Ireland, the passing of a Compulsory Vaccination Act was followed by an enormous diminution in the number of cases of small-pox; would you not be inclined to connect those two things together as cause and effect?—I should not at all, for this reason: that Parliament generally, I believe, makes compulsory Acts when there is some cause for it; that is to say, in this case, when an attack is proceeding; and as soon as ever the attack is over then naturally a decline of the disease takes place by the laws of nature, not by the laws of Parliament.

1399. Are you aware that those compulsory Acts were for many years under consideration before the Government were able to pass them?—Yes. Of course Parliament in its wisdom would have in its mind to do those things when they were wanted; but is it not a fact that they can generally better be passed when there is a certain amount of public feeling upon the subject?

1400. Then do you state that they were passed during a time of public panic caused by small-pox?—I asked rather (if I might ask the question), whether it was not generally the case that Parliament did so?

1401. With regard to your second example, namely, that of your coachman's child; you said, that after it was vaccinated it got erysipelas, and then, on that ground, you attributed the erysipelas to vaccination, did you not?—It was simply an extension of vaccination. The mother, also, was nursing the child, and took erysipelas.

1402. But she had not been vaccinated, had she?—No; but she took it from the child; at least, so I apprehend.

1403. If two persons get erysipelas, one of whom has been vaccinated, and the other has not, you cannot say, can you, that the erysipelas is the effect of vaccination, which was absent in one of those cases?—No; but I believe that it is a disputed point whether erysipelas is infectious or not. If vaccination produces a first case, and the infection of that first case produces a second, in that case vaccination is chargeable.

1404. That is an hypothesis, is it not?—No, I think not; I think that that is a positive fact.

1405. Which is the fact?—It is not that vaccination as vaccination does it, but it is erysipelas as erysipelas which propagates itself, after vaccination has first given birth to it. I do not know that anything germane to the present inquiry hangs upon it.

1406. Mr. *Candlish*.] I suppose you have not practised homœopathy all your life?—No.

1407. Since when have you been practising homœopathy?—I think I have practised homœopathy for the last 28 years, and was in the other system for 12 years. I have been 40 years in all in the profession.

1408. During the 12 years before your adoption of homœopathy did you vaccinate?—Yes, and until within the last five years; I had never thought about it before.

1409. Has your change of view been the result of your personal observation and study?—It has. I have been also somewhat moved more easily to the change from feeling that small-pox can be very easily treated by the method which I have indicated, and consequently it has not seemed to me so terrible a disease. Perhaps that first gave me the feeling that vaccination might be dispensed with.

1410. Do you trace the connection of cause and effect in the five cases that you have mentioned, the cause being vaccination, and the effects being such as you have described?—I do.

1411. Do you attribute the effects to vaccination as such, or to the imperfect lymph used in vaccination?—I am inclined to attribute it to vaccination alone; I do not know that the lymph was imperfect; it is a very difficult point to settle.

1412. Do you think that those diseases follow if the lymph be pure?—I have heard that Sir Culling Eardley died of the effects of vaccination, and that 15 other persons vaccinated with the same lymph took no ill from it; therefore I presume that the lymph in that case (if that is a true statement) was perfectly pure.

1413. Is it not the common sentiment of the profession that only in cases of impure lymph can any foul disease be conveyed by vaccination?—That is perhaps a common sentiment of the profession; but I do not know that it is a well-founded doctrine.

1414. In the main do you subscribe to that, or do you differ from it?—In the main I believe that if you have pure lymph you will not have syphilis or any of those complications; but with the purest lymph I believe that you may arouse in the system a set of very destructive forces. In short, that simple vaccine blood-poisoning has much to answer for in its own diseases, which owing to the endowment and establishment of vaccination are unrecorded by my profession, and thus unknown to Parliament.

1415. Do you think you will never convey a foul disease by pure lymph?—Pure lymph, being itself a disease, is a foul disease; if disease and foulness have anything to do with one another, I do not know what the disease of a cow may do with anybody.

1416. Is the procuration of pure lymph difficult?—I should apprehend that it is a very great difficulty; what test have I? I see a beautiful child with a fine arm; I really know wonderfully little about this child's antecedents; there may lurk in its blood, diseases; it would require a clairvoyance far beyond mine to single out an arm and to say, this is pure lymph, because the child looks well.

1417. Then

1417. Then even the extensive use of impure lymph you regard as an inevitability, if vaccination is to be general?—It seems very possible.

1418. What is the necessity for medical men waiting for one or two, or even more months, to get what they call pure lymph?—They wait until they get a very nice looking child, perhaps the child of some family that they are acquainted with, and where they can trace his parentage and know something of the people; that is the best kind of source, of course.

1419. Then in all other cases the inference would be, that the medical man was at least uncertain as to the character of the lymph which he was using?—In the case of very poor people I suppose that is so. A medical man vaccinates from one to the other, and he is not able to know anything about it.

1420. How do you account for the universality with which, according to your view, the profession has gone wrong upon this question?—I account for it, in the first place, by the terrible consequences of small-pox in former ages; it was a very frightful disease, and people were always in a chronic panic about it. Then any great pretence, such as Jenner's, was sure to be looked at, and when the British Parliament endorsed Jenner and said, "Here we have that which will save the faces of the people," the people were exceedingly glad to try it; they did try it, and it so happened that coincidentally with that, a better state of general living, and many other causes arose, and small-pox probably very much indeed decreased in virulence; the medical profession in the meanwhile became endowed and established in it, and their minds, as investigators, were completely closed; and these I regard as the main causes of the strong hold which vaccination has now upon the medical profession.

1421. But it is 70 years since Dr. Jenner adopted vaccination, is it not?—It is.

1422. Have you ever known any analogous quackery (for that is the light in which you view this), to live out two or three generations, and to become stronger and stronger with the lapse of time?—I do not call it a quackery, because that would be to impute motives which I do not impute.

1423. According to you it is a mistake?—It is a subject upon which they have shut their minds, and they are not accessible to information at present; but I do not think that vaccination is stronger than it was. The public has been rushing after it lately, but there is for the first time a party, and a very energetic party against it, and if I am not mistaken the working classes of this country will tell a tale about vaccination very different from its being stronger.

1424. Is it not true that the thought and the science of the profession are against you, and in favour of vaccination, speaking in general terms?—Numerically it is so, certainly.

1425. Is it not numerically in the proportion of probably 95 in 100?—I think it is so.

1426. And that after 70 years of experience?—It does not follow that 70 years is 70 years of experience, it may be 70 years of apathy, and of taking for granted. In all sciences the difficulty has been not to keep things as they are, but to change them; I do not think that there is any great force in the doctrine that a thing is true because it has lasted 70 years; we are continually coming upon venerably ancient fallacies.

1427. In the face of very keen scientific in-

vestigation is it not rather remarkable that this fallacy (if it be one) should have survived?—I do not know that it is; you have not merely scientific investigation here; you have an enormous prestige attached to these things, and there are very powerful interests which prevent most medical men from ever investigating the subject. I think that 99 out of 100 of my brethren have never looked at the other side of the question at all; they are so supported by their brethren in this opinion, and it is so entirely *secundum artem* that they cannot think about it; that is my view of it.

1428. As to the interest to which you have made reference again and again, they are acting in the belief, and I daresay you will agree with me, in the honest belief, that vaccination is a preventive of small-pox?—Entirely.

1429. Would it not follow that the profession would be rather interested the other way, and that the more small-pox was prevalent, and the greater the disposition to disease, the more they would be pecuniarily benefited; and, as regards the prevention of disease, do they really, in your opinion, keep mainly in view their monetary interest?—Not as individuals; but as members of a great corporation, of a great clique, they are governed by class interests very strongly; all classes are so.

1430. If they live on disease, and the more the disease there is the better they live, would not their interests be rather against something which was preventive of disease, looking at it merely as a monetary question?—I should think not, because here you have cash down, 50 guineas a week for vaccination, and people do not count any further forward than that.

1431. Let me put a case hypothetically: in the event of this Committee, notwithstanding the evidence, or because of the evidence (as the case may be) brought before them during this inquiry, still retaining the view that vaccination is a good thing, and that it should be enforced or aided by Act of Parliament, what suggestion would you make for the protection of those who, like yourself, disbelieve in it, against the consequences of disobeying that Act of Parliament?—I suppose that all we could do would be to band ourselves together and to agitate fairly until the Act was repealed; and, in the meantime, to form leagues and clubs for protecting the poor people who could not pay the fines, by paying the fines for them to prevent their going to gaol; and to rouse the country, as upon all other great questions.

1432. You are rather directing your answer to the mode of resisting the law, but what is your view as to how the law might be made such that it could be endured either by obedience to its enactments, or by endurance of its penalties?—I think the best way would be to do what was done with the Quakers, that if a man made oath that he believed vaccination to be injurious to his child it should be waived; let it be attended with some solemnity, such as an oath ought always to be.

1433. It is rather new to me to learn that the Quakers get rid of an obligation by an oath; I think they would hardly thank you for citing them as getting off in that way?—It is the very opposite, they are excused from oaths; let an oath be an immunity from being vaccinated; and on the part of the Quakers, and all who dislike oaths, a simple declaration.

1434. Then I think you stated (and in that

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you concur with Dr. Pearce), that the diminution of small-pox has not been followed by a diminution of general disease, but that some other diseases have succeeded and stepped in and filled up the vacuum, so to speak, created by the decline of small-pox?—Yes.

1435. Unless those diseases follow the diminution of small-pox in the order of cause and effect, you will hold nevertheless that the diminution of small-pox is a good thing in itself, will you not?—It is, if it is attained by good means; but if it could be made out in any way that the diminution of small-pox by vaccination at the one end of the scale, had, at the other end of the scale, caused a quantity of exceedingly serious diseases to the community, then it would be doubtful whether even as a medical procedure it would be right to do it, and more than doubtful whether Parliament was right to make a compulsory law upon the subject.

1436. You have not yet said that the many diseases which were enumerated by Dr. Pearce were caused or aggravated by vaccination; are you prepared to say that such is the case?—If I were to express an opinion it would be merely from reading; I have had no experience, but I do say this: that if I could find half a dozen very obvious cases of disease caused by vaccination, I should be inclined to infer that there were a great many more subtle forms of disease less easily traceable to vaccination which were really owing to it; but I have not had any experience.

1437. I think you stated that you think that in infancy, at all events, vaccination has been, or may be, a protection?—The statistics appear to show that it is, to a certain extent, a protection. There is one point with regard to disease upon which I should wish to say a word. It was mentioned that the decay of the permanent teeth, had been supposed by some thoughtful dentists to result from vaccination. It is a suggestion, at first, I confess, to smile at; but when you learn that the germs of those permanent teeth, at the very time of vaccination, are being produced in the gums, and when you consider that whenever a process of conception in the body, so to speak, is going on, any shock from without may cause a kind of birth-mark upon it, which I believe to be an incontestible fact, it is not so improbable that a wrong direction of organisation may be taken by this violent intrusion of a virus into the system at that delicate and trying crisis of the inception of the teeth.

1438. Are you of opinion that protection from small-pox during infancy leads to greater exposure in more advanced life, as I think has been indicated in evidence here?—I am inclined to think that there is a great deal to be said for it; but excepting what I have learnt from Dr. Pearce I have not thought about it much myself, and my opinion would be worth nothing.

1439. Admitting, as you do, that vaccination in infancy is or may be in some degree a protection, the measure of which you do not define, would you also say that re-vaccination in more advanced years was a protection?—I have really had no experience of re-vaccination lately, but I do not see any reason to suppose that it is so. It is very difficult, because a person has not the small-pox, to argue that he would have had it if he had not been re-vaccinated.

1440. Your conclusion in general terms is, that the knowledge we have of the action of vaccination is not so certain and uniform as to justify a

compulsory law to enforce it; is not that so?—I do not think it is a case for Parliament to interfere; it is both subtle and private. It is like everything connected with the medical art; it appears to me to be a set of private beliefs, often very valuable, but very dangerous if embodied into legislation, and liable, as they are mere prescriptions, to rouse a very great deal of resistance on the part of the people, at a time when medical freedom is becoming a powerful sentiment. Legislation also fixes medical dogmas, where they ought to be kept liquid for constant use and rapid change.

1441. You give some colour of justification to the legislation, I think, in your own opinion that it is a protection in infancy?—I do not admit giving any colour in that; I think if Parliament would deal with its great general powers of a sanitary kind, and leave us alone to rival each other, and to fight these cases out, medicine would be in a much better and purer state than it is, and the true citadels of small-pox would be attacked by both public means and private means.

1442. Dr. Brewer.] I think you object to the isolation of small-pox cases, and I believe you have stated that infection has been increased by it in the case of the Hampstead Hospital, by parties being transmitted to that hospital in cabs, which you conceive to be a source of disease; is that so?—I think I said in open vehicles—in open ambulances.

1443. Are you aware of open ambulances having been used?—I have heard from my patients who live there, that they have actually seen them, but I have not seen them myself.

1444. Then you believe that disease is caught in the transmission of those cases?—I think so.

1445. Have you ever heard of such an instance?—Yes, I have, in the case of my sister-in-law.

1446. By seeing a case pass in the street?—No, not by seeing a case pass in the street. She went one day past the Small-pox Hospital, when it was at King's Cross, and she suddenly felt that she had caught the small-pox. In a certain number of days afterwards (I do not remember how many) she came out with the small-pox.

1447. Then you believe that disease is caused in transmission from the person's home?—I think so. I think it is reasonable to suppose so.

1448. You say that the poorest classes suffer most from small-pox, and you have stated, I think, that the main decimation of small-pox is in the lower strata of society, diseases attacking the lower classes far more severely; is that your opinion?—That is my general opinion.

1449. Do you think that hospitals recently opened have been filled by the lower classes exclusively;—I did not say that.

1450. Will you be surprised to hear that the worst cases are by no means amongst the poorest classes, but that they are barmen, potboys, seamen, ostlers, and others who consider stimulants necessary to their various callings?—Just so; that exactly bears out my idea.

1451. You say that the disease of small-pox is less now in intensity, where the patient is unvaccinated, than it was in former times. Are you aware that the severest cases have been seen this year that we have known during the memory of any man?—It is very possible that the disease may attain now and then a very great intensity; and yet the general decline in small-pox may be quite consistent with that.

1452. Has

1452. Has it not always been the fact that some cases are more severe than others?—Certainly; but there are in this particular year very considerable reasons for this small-pox; for instance, this great war, before which the small-pox appeared in a very bad form in Paris.

1453. Do you believe that the diseases from small-pox in unvaccinated cases are now milder than they were in the last century?—I should say, as a rule, upon the whole century, I am inclined to believe that they are.

1454. Have you ever seen *variola nigricans*?—I have never seen it.

1455. Are you aware that there are a vast quantity of cases of *variola nigricans*?—Yes.

1456. Are you aware that the *variola nigricans* is not seen so frequently in the poorer classes as in the well-off and well-to-do classes?—Yes.

1457. Then it is a fact, after all, that the small-pox has not diminished in intensity where there has been no vaccination practised, or where habits of good living, and too good living, are used?—Too good living is not good living; and, upon the whole century, it may be true that it has diminished, and yet that in this particular epidemic it has not diminished.

1458. Then the main decimation is not mainly in the lower strata of society in this epidemic, but it is equal; and perhaps the worst cases are among the better-off classes?—Only that the better-off classes, who are ostlers and barmen, are saturated with intemperance, and they are decayed, and belong in all right reason to the lowest strata. Moreover, infection brought from France by the travelling classes accounts for the disease among them, and in good neighbourhoods.

1459. Supposing the Government were to desire the treatment of two millions of people by this *veratrum*, or extract of green hellebore, and, that after ten years' trial, it was found that only three deaths occurred per annum, say in 33 years, and that before that treatment 104 deaths occurred, would you not say that that was a strong indication that the green hellebore had been successful?—Yes, I should. But the *hydrastis* is the great antidote to small-pox.

1460. But supposing you were told that instead of being treated with green hellebore, 2,000,000 of soldiers were vaccinated, and exactly the same result occurred, would you say that that was a great indication that vaccination was a successful prophylactic?—I do not see any analogy between the two things; in the first case, the *hydrastis* is put upon those people's faces, and there is a clear close connection between cause and effect. In the other case, the vaccination is simply a fact lying in the past, the mildness of the case is far away from it, and it is a mere inference. In the one case it is a mere fact, and in the other it is a mere inference. If I take a small-pox face, and it is itching all over, and violently swollen, and if in the course of half-an-hour I take away the itching, and if in the course of 12 hours I reduce the swelling by those applications, that is what I should call a fact.

1461. You apply a prophylactic remedy to 2,000,000 of people, and the prophylactic remedy has this result, three deaths per annum when used, 104 deaths per annum when not used; is not that a great indication that the prophylactic remedy has had some force?—I do not exactly understand whether or not you are now talking of a term of years.

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1462. Taking a term of 33 years, from the year 1833 to 1867, not including both of them, it having been ascertained that among 2,000,000 of vaccinated soldiers, there have been during that term three deaths per annum from small-pox, whereas previously to that period, in a similar term of years, 104 deaths annually occurred; is, or is not, the prophylactic remedy there strongly marked as being efficient?—I do not think it is. Prophylaxis in medicine is always a subtle and difficult argument. Successful treatment is a gross fact; there is really no analogy between prophylaxis and treatment.

1463. With regard to diseases of the teeth being produced by vaccination, do you know what is the destructive thing which decays the teeth?—No.

1464. Are you aware that it is a well-known parasite?—I know that there is a parasite, but I do not know that it is the parasite which is the cause.

1465. Are you aware that it is so much so that the greatest dentists hardly know of any other source of disease?—But you often see teeth springing up of all kinds of abnormal shapes; that is not a parasite; and those teeth are much more liable to decay.

1466. In the 16th, 17th, and 18th centuries we have good books on dentistry; do you mean to say that the teeth are worse now than they were in those centuries?—I do not know.

1467. Taking soldiers' teeth, for instance those who are engaged in war, are not the teeth better preserved now than they were in the 18th century before vaccination?—I do not know; but I merely went upon this, that the general decay had been attributed to vaccination. In Germany the teeth are much decayed, and vaccination very general.

1468. But it seems to me that before vaccination was practised, the diseases which destroyed the teeth were actually more virulent than they are now?—Were they?

1469. That is the medical report, and I thought you knew it; with regard to that very difficult case of Miss Hutchinson, I think you stated that she was vaccinated at four months old?—She was, and again about six years old.

1470. And she died in her sixth year from putrid thrush?—Yes, and from abdominal abscesses.

1471. Do you state that putrid thrush was not known previous to vaccination?—Undoubtedly it was.

1472. It is one of the oldest diseases we know of, is it not?—Yes, no doubt.

1473. Then why do you attribute putrid thrush to vaccination, seeing that it was known, and was quite as common before vaccination as it has been since?—I gave my reasons; I traced what I considered to be the physiological points in the case.

1474. Considering that that disease is not a new disease, and that none of those swellings are new diseases, do you think it fair to attribute to a new prophylactic remedy an old disease which was well known to us?—It is quite fair; because this occurred in a series in which vaccination had immediately produced, as nobody can doubt, an enormous swelling of the two arms, so that they were obliged to be laid out upon pillows.

1475. Do you know Dr. Marshall Hall?—I know of him; I did know him.

1476. Do you maintain that beautiful children are less likely to suffer from cerebral disease during

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1477. There was a beautiful child to whom you have alluded, who died of convulsions in teething as it is supposed, but because it is a beautiful child you say that it did not die from convulsions in teething, but it died from mesenteric disease produced by vaccination; is mesenteric disease more common now than it was previous to vaccination?—I laid no stress upon its being a beautiful child; but the child when I saw it was in full possession of its faculties, and the convulsions were only the last stage of the case.

1478. But you say that there was mesenteric disease; did you open the body?—No, I did not; but I could feel the state of the abdomen.

1479. Are you aware that in every rank of life years and years ago, especially in the commencement of the 17th century, mesenteric diseases were very common, and numbers of beautiful children died of them?—Undoubtedly.

1480. There was no vaccination then, was there?—No; but here the whole of these consequences came immediately after vaccination. First came a rash, which showed that vaccination had produced a powerful impression upon the system; then the marks upon the arms never healed; and other marks of a similar kind also appeared, which showed that the system was still labouring under this impression.

1481. The mother attributes it to vaccination, but of course mothers attribute the deaths of their children to anything but constitutional disease; they do not like constitutional disease: is it not the fact, that mesenteric disease has certainly not been so prolific of death and fatal consequence as it used to be before vaccination; I will not say in consequence of it?—I cannot tell you; I do not know.

1482. Not having opened the body, and admitting that disease might occur, and does occur, without vaccination, will you not agree with me that there is really no actual proof, and hardly even a fair inference, that it was produced by vaccination?—I do not agree with you in the least upon that point; I believe that the tangible evidence is so great, that no amount of reasoning can get away from it, and I perfectly agree with the mother.

1483. In the case of erysipelas attacking the mother of the child, the one being inoculated and the other vaccinated, why do you attribute the disease of the mother who was inoculated indirectly to vaccination?—Simply because the child which had erysipelas was lying in her arms, and a precisely similar disease occurred upon the mother, the child having it first. It might be endemic in the house, commenced by the child.

1484. But the mother is evidently as susceptible as the child to this erysipelas, and yet more susceptible in one sense, because old people do not take disease so easily; yet she was inoculated, and the child vaccinated; is it not impossible to attribute the mother's disease to vaccination?—I do not attribute the mother's disease to her vaccination, but I attribute the erysipelas of the child to the vaccination, and the erysipelas of the mother to the erysipelas of the child.

1485. You attribute it, I presume, to the susceptibility of the child being increased by vaccination?—It was a direct erysipelatos inflammation which came up with the vaccinator's pustule. The mother had been inoculated in her childhood.

1486. How could she be susceptible of erysi-

pelas if the vaccination produced the susceptibility, because erysipelas and *vaccinia* are not one and the same disease?—Of course not. At the end of my examination upon that point I stated that I did not know that the mother's case had anything peculiarly germane to this inquiry.

1487. You have seen a great number of cases of small-pox, I have no doubt, and those produced after vaccination: if you go round and see 700 or 800 cases, can you, with your finger, point out distinctly the cases where vaccination has been what is called fully and freely carried out: can you say, "That is a vaccinated case, and that is a vaccinated case, and that—", because I can do so, and have done it in the last few days?—I cannot. I could not go round to the 150 vaccinated cases reported dead in the last two weeks and point out distinctly that they were vaccinated cases.

1488. Mr. Taylor.] You have been in the medical profession for 40 years, and have practised vaccination up to the last five years, I believe?—Yes.

1489. Your doubts, as I gather from your evidence, as to the necessity of vaccination, arose from a new system of treatment that you had discovered, and thought very effective?—That was one element in setting me free from the idea that vaccination was absolutely necessary as a preventive.

1490. What other element in your mind raised the doubt as to the advantage of vaccination?—I read upon the subject, and I found allegations of a vast deal of mischief caused by vaccination, which appeared to me to rest upon good and tangible grounds; very often the evidence of mothers; but I found that they were to a certain extent corroborated by my own experience within the last three or four years.

1491. Is it possible for those cases which you have mentioned of various diseases, such as convulsions, erysipelas, abdominal abscess, and so forth, to arise without the assistance of vaccination, and to arise continually?—Certainly.

1492. Therefore it is a matter of inference, I presume, whether they were caused by vaccination or not?—It is an inference, no doubt, but it is a very strong inference when you find them immediately following vaccination.

1493. I understand you to say that you look upon the cases that have come under your knowledge not so much as theories, but almost as self-evident facts?—They appear so to me.

1494. And yet you very justly said that the question of evidence must depend upon numbers: supposing that you found four, or five, or six cases in which those diseases followed vaccination, and supposing that there were well-known cases of hundreds, or hundreds of thousands, of persons where such results had not followed, would not the balance of evidence lead you to suppose that it was not vaccination that had caused disease in those individual cases?—It would not lead me to suppose that, because in the one case the evidence is purely negative. If you have half-a-dozen cases in which vaccination is immediately followed by very tangible effects of disease, they would stand as a piece of evidence; but if you have 10,000 cases in which vaccination is followed by nothing, it counts for nothing; it is nothing.

1495. If there were 100,000 well-authenticated cases in which none of those results did follow vaccination, and there were four well-authenticated cases in which those results did follow vaccination,

tion, would not the inference be that vaccination had not been the cause of them?—I should say not.

1496. You have seen a good many small-pox cases in your own practice, I presume?—I have.

1497. Some severe and some light?—Some very severe.

1498. Do you know what relation vaccination had to those cases, and whether those that were light had been vaccinated, and those that were severe had not?—No; it was before I was specially interested in the subject that I treated most of them.

1499. As the result of your examination, did you find the severity of the disease mitigated or not by vaccination?—That altogether depends upon my general view, and I am inclined to suppose that vaccination does not materially protect. I am not inclined to be certain that vaccination is no protection, but I feel doubtful about the whole case.

1500. I understand your judgment in regard to the uselessness of vaccination to have been very largely influenced by those four or five cases in which you found that certain results had followed vaccination?—Not so; I have read very considerably on the subject, and I have seen that there are a great number of similar allegations to those which have come under my own knowledge, and I have from my medical brethren, who take the same view that I do, had very considerable testimony which has built up my own.

1501. You are aware, of course, that there is a great mass of testimony precisely in the opposite direction?—I am quite aware of the strength of the other side, and have stated fully in what I conceive it to consist.

1502. You stated, did you not, that you did not attribute the diminution of the malignity of small-pox to the practice of vaccination, because you think the malignity of small-pox, as of other similar diseases, has a tendency to decrease, and has in fact decreased?—I did not say that this epidemic is less malignant, because I am quite aware that it is not.

1503. Would it not be a fair way of testing it to compare the deaths many years ago, before vaccination was known at all, with the deaths which take place now in non-vaccinated cases?—It would not be conclusive; it would be an interesting subject, but it would not show that there was not a natural aggravation, and then a decline of the disease.

1504. If it be true, as Dr. Woodward asserts, that the deaths of the non-vaccinated from small-pox are now 35 per cent., whereas during the last 25 years of the last century, when of course all were unvaccinated, it was only 32 per cent.; that would so far go to show, would it not, that the malignity of small-pox *per se* was not diminished?—Yes.

1505. Mr. *Jacob Bright*.] Are there many medical men who oppose vaccination?—I think there are a good many and an increasing number.

1506. What makes you think the number is increasing?—Because I know them; I come across men who are becoming converts against vaccination.

1507. Do you know many medical men in London who are opposed to vaccination?—I do not know many, but I am not at all a public man; I do not know many of my brethren; I am too busy.

1508. Do you know whether the doubts which

you and others entertain with regard to vaccination are also entertained in other countries?—Yes, they are.

1509. Where?—There is a school of anti-vaccinators in America, and there is in Sweden and Denmark, and in Germany, a growing opinion against vaccination. One of my correspondents, who is a legislator in Sweden, a man of great scientific eminence, Dr. P. A. Siljeström, wrote to me to this effect: "I have always felt that if vaccination does not stand against small-pox it is nil; if it does so stand, millions to one but what it imports other and powerful disorders into the system." I cite him as being a Swedish authority; he was a favourite pupil of Berzelius, and is a man of great eminence.

1510. You were asked just now by the Honourable Member of Sunderland, whether, if you are right in your views, it was not remarkable that nearly the whole medical profession should practice vaccination and believe in it; if it should ever turn out that they are in a delusion upon this question, would it be for the first time that they have for a long period entertained a grave error?—It appears to me that the medical profession is a record of very great changes of opinion; there is hardly a doctrine or practice existing now that existed in the last century, and as I am a homœopath, it appears to me that the medical profession has made a very grave error in not looking into homœopathy.

1511. If you were asked which had been their most remarkable errors, what would you point to?—That is a wide field; I should say that the great practical error of the medical profession at present is the whole system of drugging put together, which can be done without.

1512. Would bleeding be one of their great errors?—Yes, it is indeed, and upon that they are gradually improving; they are giving it up. They used to encourage the bleeding of people regularly in the spring; that lasted for centuries.

1513. As regards the practice of giving mercury; have they been in great error upon that subject?—Most enormous.

1514. Have not some diseases so altered their character that it is in doubt whether it is not owing entirely to the change produced by the use of mercury?—Certainly.

1515. Do doctors now put 20 or 30 things together in one prescription?—I think they very often put six, or eight, or nine.

1516. How long is it since they put two or three times that number?—I do not know; I do not think I recollect more than eight or nine.

1517. Is it possible to know how eight or nine things can act together?—No, you cannot know.

1518. Mr. *Muntz*.] I suppose that medicines, like other things, have been fashionable occasionally?—Yes, very fashionable.

1519. You stated to the Committee that there were several cases which you mentioned of diseases that had appeared after vaccination, which you attributed to vaccination; do you attribute them to vaccination with what we will call pure lymph, or to other diseases that the child from whom the lymph was taken might have inoculated at the same time?—I thought there was nothing in the cases I have cited to show that the lymph was impure.

1520. But is it your opinion that it was merely the lymph, or the lymph impregnated with anything else?—I thought it was merely the pure lymph.

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1521. You

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1521. You were asked by one of my honourable friends, whether it was not a singular fact that you saw so few pitted faces; now I think you mentioned that you had practised 40 years?—Yes.

1522. You must remember, as well as I do, the pitted faces which we used to see in the early part of the century?—I remember them.

1523. Is not that a thing which you rarely see now, although it was almost general then?—Yes.

1524. You would attribute that, I presume, to some cause, but not to vaccination; what was that cause?—One cause, I think, is the total difference of treatment. In the old treatment the patients were shut up in every way; air and water were excluded.

1525. You are aware that soon after Dr. Jenner's discovery, or guess, or whatever you like to call it, vaccination was, I may say, imported into almost all the Northern States of Europe?—Yes.

1526. Are you aware that faces pitted by this disease have ceased to be seen in those countries, and are very rarely now seen at all?—Yes.

1527. To what do you attribute that, if not to vaccination?—I have just said that the mode of treatment of small-pox has very materially altered for the better.

1528. If I told you that there were districts of thousands of miles where not a case of small-pox has been known for eight or ten years, that would not be accounted for by the treatment, would it?—I cannot tell what has been the cause. All those diseases die out, both in place and time, and reappear again.

1529. You are aware that lately there has been a vast number of French prisoners taken to North Germany, in fact from the Rhine to the borders of Poland, and to the Baltic; and that they were placed in various fortresses all over the country; and you are aware, of course, that they carried small-pox with them?—Yes.

1530. Have you ever turned your attention to the fact that the Prussian troops who have guarded them do not get the small-pox from the prison, and that we had evidence before this Committee that there were two cases in one year; and if that should be the case, would it not seem to indicate that the system of vaccination, so thoroughly carried out in the German armies, has been to a certain extent a preventive of the disease?—It might or might not; the Prussian man is a totally different man from the French man, and has very much greater powers of resistance. Moreover, I doubt the facts; the regular French army, like the Prussian, is a vaccinated army; if the French take small-pox, and the Prussians do not, the whole circumstances, of vanquished and victors, of prison on the one hand and not on the other, of inclement climate to the one which is native climate to the other; of the French living in tented fields and being poorly clad, would easily account for the whole difference, so far as there is difference.

1531. You made a remark that medical men were making 2,000,000/. sterling per annum by vaccination, did you not?—No; I said during a great panic.

1532. What is the medical charge for vaccination by a respectable practitioner?—I do not know. I suppose it would be a guinea where he goes into very good houses, but some only charge 10s.

1533. Mr. *Candlish*.] Is it not just what he can get?—Yes, I rather think that is the way of it.

1534. Mr. *Muntz*.] If you take it at merely 10s., that, on your supposition, would give 4,000,000 people to be vaccinated in a panic; that is a very great number, is it not?—Yes, it is a very great number; but there are many large establishments in London where it has been done. However, perhaps my estimate was excessive.

1535. Are you aware that you will hardly find 2,000,000 people in Great Britain belonging to what you may call the wealthier and more comfortable classes?—Perhaps not. I only heard that, but I heard it on very good authority.

1536. With regard to vaccination, in one of the answers given by you, you spoke of the different state of living, and the different sanitary condition of the people, as one of the causes preventing this disease from being so common and so fatal as it used to be; have you ever turned your attention to the fact, that in the last century and the century before, many of the wealthier classes died of small-pox?—Yes.

1537. It is a historical fact, is it not, that princes, dukes, and peers died of small-pox?—Yes.

1538. Is that the case now?—No, it is not.

1539. To what do you attribute that change?—I can only give an opinion; but there is no doubt whatever that at that time the small-pox might very well rage, from the fact that kings and princes were much of the same class as Dr. Brewer has designated as barmen, and ostlers, and so forth. There was a great deal of saturation of the system by drinking in those days.

1540. The ladies were hardly of that class, I presume, and yet Henrietta of Orleans died of small-pox?—But the ladies had their lords very near them. When you have a king with the small-pox, the queen is very likely to take it.

1541. Mr. *W. H. Smith*.] I think you stated that one great ground of the difficulty of getting the medical profession to entertain the question of opposition to vaccination is their indisposition to change?—Yes, I think that is one reason.

1542. They stick by the old traditions?—When a tradition gets well founded, and endowed, and established, they stick by it.

1543. How do you account for the sudden acceptance, 70 years ago, of vaccination, which was a great change?—It was a great change; but that is partly accounted for by the fact that the British Parliament, not without very considerable protest, when it gave Dr. Jenner the most powerful character it could in giving him 30,000 £., led off the whole prestige of vaccination.

1544. But is the British Parliament given to taking up new ideas so rapidly as to give 30,000 £. and endow (as you term it) a new system of medicine, without very special grounds for doing so?—Undoubtedly not; and for that very reason, if Parliament made a mistake, then the whole of its wisdom would be credited to this, which might be its folly, and would go to make the folly very powerful.

1545. If it be folly, is it not a folly which all educated people, speaking broadly (of course I know that there are exceptions), indulge in and believe in?—The majority of educated people do, but there are a good many exceptions, and very highly educated exceptions, even in the medical profession; the great majority of people in this country

country (excepting the working classes), and in all the other countries of the world, are in favour of vaccination.

1546. So much so that you say and repeat, that if vaccination should last 1,000 years it could hardly have a greater hold upon the people than it has now?—Excepting among the lower orders.

1547. Do you think that their intelligence, and their grounds for objecting to vaccination, are better and stronger than those which the educated classes have for believing in vaccination?—I think they are, because they see more of the evils of it in their families.

1548. Do you think that an educated man, with a family of children, is not so able to form a correct judgment as to what is good for his children as an uneducated man is; is that your position?—That is not my position; my position is that if there be a class of society in which vaccination does more mischief than in another class, the class in which the mischief is done will know more about one particular side of the subject than the other class; vaccination among the poor also is a very different thing in its indiscriminateness, and necessarily so when vast masses have to be vaccinated; from vaccination among the class in which a medical man waits two or three months to select a child to vaccinate from.

1549. Then your argument is, that it is the inferiority of the vaccination of the poor which induces the poor to object to it?—That is only one element in it; but indiscriminate vaccination from poor little miserable wretches to other poor little miserable wretches is much more likely to cause vile results than well-selected vaccination.

1550. Do you hold that small-pox itself is beneficial to the general health?—I have heard, and I believe, that statistics show that when small-pox epidemics are rife the mortality is somewhat less than usual.

1551. Evidence has been given to the effect that a person who has once had small-pox never suffers from any other ailment; do you agree with that opinion?—I have noticed that sometimes after small-pox there is a great clearance of the system; but I have seen the same thing after an attack of cholera.

1552. Do you advocate the abolition of vaccination in order that small-pox may prevail?—Certainly not on that ground.

1553. If it tends to clear the system, would you hold that view?—Nothing can be built upon that; I say that I have sometimes, where a person has had an attack of small-pox, seen that the health has been better afterwards.

1554. Then, in reference to that remark, you would not say *post hoc, non propter hoc*?—No, I should say that, for the most part, if one has had a smart illness and has got handsomely through it, one is better for a time.

1555. But if vaccination does prevent small-pox, do you not think that vaccination ought to prevail?—It ought to prevail by its own force, but not by Government interference.

1556. Then, is your objection to Government interference, and not to vaccination?—My objection at present is entirely to Government interference; but, personally, I do not vaccinate; I shall merely propagate my own view in a private way, but I should agitate in order to get compulsory vaccination ended.

1557. Dr. *Lyon Playfair*.] I think you stated that the great stimulus of the belief of the medical

faculty in vaccination was due to the Parliamentary Grant which was given to Dr. Jenner?—I think that was the beginning, and it was a considerable beginning.

1558. I think you stated that that explained how it was that such an immense impulse was given to the medical profession in their belief in the new doctrine?—Yes.

1559. Are you not aware that Parliament has on one or two other occasions given awards for supposed scientific discoveries?—Certainly.

1560. Where those supposed discoveries turned out to be false discoveries, did the mere fact of Parliamentary endowment propagate the error for many years, or for two generations as in the present instance?—No; but supposing that other things were coincident, and that a great decline of small-pox from natural causes took place coincidentally with the introduction of vaccination, then it would seem that vaccination had to do with it; and then the belief in the wisdom of Parliament would add itself to that coincidence, and would constitute a very powerful prestige.

1561. Then it was not simply Parliamentary prestige?—Not simply; all those things go together.

1562. Are you aware that Parliament gave 5,000 *l.* or 10,000 *l.* for disinfection by nitrous fumes?—Yes.

1563. That was afterwards proved to be an error, was it not?—Yes.

1564. Did the mere fact of the Parliamentary endowment prevent the sweeping away of that error?—I suppose not; it was swept away.

1565. One of the five instances which you have brought before us, was that of a literary man whom you attended, whose surgeon had said that the eczema which he had was a gout eczema, but you thought that as it came after vaccination, it was produced by vaccination?—Yes, it came immediately upon it.

1566. I will state to you a case which I happen to know personally, and not theoretically, not of a literary man, but of a scientific man who had gout eczema three weeks before vaccination, and when he was re-vaccinated at the end of three weeks, the eczema appeared to go away altogether; would you say that that is a case of *post hoc ergo propter hoc*?—It is possible.

1567. Is it not as probable that in one case as in the other there may be no connection as between cause and effect?—It seems to me that when you have something which may be a cause, and immediately following that cause a visible consequence, it is most likely that the relation between the two things is that of cause and effect.

1568. You would say that the re-vaccination in that case was the cause of the disappearance of the gouty eczema?—It might be so.

1569. It might be *post hoc ergo propter hoc* in the one case as in the other?—It might be so.

1570. You stated, did you not, that the Compulsory Vaccination Acts for Scotland and Ireland were passed in a panic, or when disease was very rife, and that that was the reason that the great decline of small-pox had taken place?—I do not think that I stated that specifically; but rather that for the most part those Acts have been coincident with outbreaks of disease; I did not localize it.

1571. Is it not the fact that for a long series of years, both in Ireland and in Scotland, previous to the Compulsory Act, upon an average a thousand persons died annually of small-pox in

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Mr. J. J. G. non-epidemic years, and considerably more
Wilkinson, than a thousand in epidemic years?—Perhaps
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1572. Are you aware that small-pox in Ireland has now almost disappeared, and that in Scotland it has practically disappeared?—I am not aware that in Ireland it has almost disappeared, for I hear that it is reappearing.

1573. I am speaking of the Registrar General's returns for the past year; you stated, did you not, that you did not think that the general opinion of medical men in favour of vaccination was to be much credited, on account of "the intensely hot feeling" that prevailed?—There is a very hot feeling.

1574. And you think that the expression of the intensely hot feeling which prevails just now prevents due attention being given to the opinion of those medical men?—The drift of my remarks was, that inasmuch as the medical profession had very much staked itself upon vaccination, its honour was exceedingly involved in the truth of vaccination; and that there is a very considerable amount of what, without derogation, I would call medical passion going into the whole question of the doctrine of vaccination.

1575. And the passionate feelings prevented your giving full credit to a calm expression of their views?—I think it must be taken in abatement of the whole of that case.

1576. Will you allow me to read this statement of a medical man, and tell me whether you think it is intensely hot, and contains any passion: "It is equally obvious that if a mother or father can say to the virus-man, 'Sir, I believe in my soul, from dire experience in my own family, or my neighbour's, that what you are bent upon doing to my baby will pollute its health, and probably take its life, and I will resist it to the death, and rouse my neighbourhood to resist it;' it is obvious that whatever weapon that woman or that man uses to protect, not only his fireside, but the very blood of his race; and whatever arousing of the passions of his commune he may cause against his poisoners, the public opinion of the world will justify him, as much as if he shot down a midnight assassin from his wife's and child's bedside;" are those hot expressions?—Very.

1577. Are they written in the heat of passion?—Yes. They are hot indignation, not hot statistics.

1578. May I ask if that is your work?—That is my sign manual.

1579. You might, perhaps, draw the conclusion in your case, as well as in that of others, that there may be, as you said, intensely hot feelings which may prejudice the judgment?—Certainly.

1580. Then, again, in the same work, would this be your recommendation as the result, for instance, of this Committee's investigations: "And so the State shall say one day, better let epidemic small-pox sweep our towns than vaccination outrage hearts and homes under the pretence of abating it;" are you still of the opinion that it is better for epidemic small-pox to sweep our towns than for vaccination to outrage hearts and homes under the pretence of abating it?—

I do not remember that passage exactly; but I think that afterwards I stated that there was no chance of its doing so.

1581. But you said that it would be better, did you not?—I think it would be better for Government to hold its hand entirely from medical prescriptions, and that with the enlightened sense of the community continually going on, we are more likely to get a good result of health by the Government not interfering with those things which it cannot carry out than by the present system.

1582. *Chairman.*] In giving that reply, I suppose you do not mean to say that Government should not interfere for the protection of the health of the people?—I feel very great diffidence in speaking on such a point; but it has occurred to me that the true sphere of Government is in those great general things about which there is no cavil, upon which all men are agreed, such as light, air, cleanliness, and so forth. On this there is no dispute whatever, and I think it is the sphere of the Government, as far as my doubts have gone, to interfere actively in those things, and then to let the medical profession do its very best in a perfectly private way on the other side, and I believe that then medicine will be a nobler art, and Government will be blest by the working classes.

1583. *Dr. Brewer.*] You seem to think that all people are agreed upon two points, the value of fresh air and of cleanliness; do you think that is so, and especially as regards the working classes to whom you have alluded?—I do not think so at all; but inasmuch as there are certain things which it is insane to doubt, and yet a great number of people do doubt them, you have surely a right to carry all those obvious truths against the ignorance of the people. I think that drainage, a sufficient number of cubic feet of air, pure water, and all those things, come under the head of general truths, which if people do dispute they are unsound; but with regard to vaccination, it is, to say the least, a doubtful point; it stands on a very different foundation from washing and lodging. "Cleanliness is next to Godliness," but I know no place for vaccination in that series.

1584. A vast number of mothers in a certain rank in life have a most inveterate dislike to the heads of their children being washed; would you allow them because they believed that washing the heads of their children was productive of great injury, great misery, and positive disease, therefore to resist the washing of the heads of those children, thereby exposing them to known diseases, or would you say that they were insane to doubt the advantage of washing?—Upon that point they are socially unsound; but I should not like the State to wash children's heads. I should like the State to provide water, and to provide all the things with which they could gradually come into better health, and to attract the poor ignorant people to these good gifts of Government.

1585. Do you believe that the lower classes think that fresh air is beneficial to them in diseases?—I do not think that their minds are sufficiently developed to have thought upon the subject.

Mr. GEORGE SLEIGHT GIBBS, called in; and Examined.

1586. *Chairman.*] ARE you an Accountant at Darlington?—Yes.

1587. You have a strong objection to compulsory vaccination, have you not?—Yes, very strong.

1588. Have you given great attention to the subject?—Yes, I have; for many years.

1589. On what grounds do you object to compulsory vaccination?—Dr. Ballard, in his prize essay on vaccination, states distinctly in three places that vaccination is simply an infliction of disease on the healthy human frame, as much a disease as small-pox, measles, or any other disease of a similar character; and he further says that although in a general way this disease may take a mild course, still it occasionally shows its specific character by assuming a virulent form, and that healthy vaccine lymph (those are the words he used) will run a course through the human frame, just such as you might expect from a virulent animal poison, and prove fatal.

1590. Do you yourself believe this to be the result?—I do. I wish to quote that from Dr. Ballard's book as my own opinion. Although occasionally, and perhaps in the majority of cases, no immediately fatal results accrue from scratching the arm and the insertion of an animal poison, still it occasionally proves fatal.

1591. Will you state your own experience with respect to it?—I have a very strong political objection to compulsory vaccination on this ground: that I, as a parent, having under my care a child perfectly healthy, I believe that I have politically, and I certainly had up to the 1st January 1854, a perfect right to maintain that child in the state of health in which it then was, but on and after that date I was obliged, under certain penalties, to take, or cause to be taken, my child to a person appointed to have an operation performed upon it, which is, according to the highest authority which I have quoted, simply the infliction of disease, which may prove fatal. In John Stuart Mill's Essay on "Liberty," he says, that "no state can be called free where a man has not a perfect control over his own health, bodily, mental, and spiritual;" and the state cannot be free where the right of the parent is taken away to maintain his children also in that state of health.

1592. Do you upon that theory consider that the State has any right at all to interfere with respect to the health of the people?—The State in this case orders the infliction of this disease.

1593. I am not asking you with respect to that, but on the same theory do you think that the State ought to provide for the people light, and air, and water?—That is a different theory.

1594. What is the difference?—The difference is, that in one case you order the infliction of disease, and in the other case you provide a patent means of maintaining health.

1595. Would not the theory which you have quoted also enable a man to say that he may live in any den he chooses, if he is satisfied to live in a filthy place, and would it not also enable a man to use any deleterious water from any spring he chooses?—As long as a man does no harm to his neighbours the State has no right to interfere with him. A man might drink poisoned water, as many do, and drink themselves to death; they

get drunk, over and over again, until their systems are ruined, and they die from the effects of intemperance, but the State does not interfere with them as long as they are not disorderly.

1596. Do you say that the State has no right to interfere, even to prevent the intemperance of the people?—The State has no right to interfere. Perhaps I may be permitted to say, that I have another objection which is apart from vaccination itself, and that is a moral objection; this objection is very largely entertained by others as well as by myself, and that is, that we parents having children coming to us in the course of nature in a healthy state, have no right whatever to put, or cause to be put, or allow to be put, into their systems a poisonous matter, the result of which we cannot foresee.

1597. You have stated now the political and moral objections; have you any other objection to compulsory vaccination?—Yes, the evil is a positive one, and it is proposed by this law that that positive evil shall be inflicted upon every child born with a view, it is said, of preventing an evil which does not then, at all events, exist, and which, so far as anybody knows may never exist. Now that brings us, of course, naturally to the question as to whether the infliction of this positive disease does prevent the contingent disease which it is said to prevent, and to obtain which indefinite advantage we are desired to waive our political and our moral objections. In the first place, with regard to the uselessness of vaccination in preventing small-pox, I beg leave to hand in a statement, which I have prepared as far as I could, respecting the small-pox mortality in London during seven weeks ending 4th March 1871, that is during the present epidemic.—(*The same was delivered in, vide Appendix.*)

1598. From what paper have you taken that return?—I have taken that return from this paper which I hold in my hand, and which I got from the Registrar General's office. On the 17th of February I sent a little paper up to the Registrar General's office partially blank, requesting information as to the details in the statement which I have handed in, giving vaccinated, not vaccinated, not specified, and total; and by return of post I got the figures which are there filled in in red ink from the Registrar General's returns for the first four weeks.

1599. Then you give a return for the week ending February the 18th without any details?—Precisely, and it is to that I want to draw the particular attention of this Committee. For the week ending February 18th the Registrar General published a report, in which he said that the persons specified during the week as dying from small-pox, and not having been vaccinated, was 56 per cent. Trying that per-centage upon the figures which I have for the previous week, and upon the total for the week, I found that I could not come to any decisive conclusion as to what the numbers were, and I wrote on the Thursday, which would be the 23rd of February, to the Registrar General's office, asking him for the figures, and I got this letter, which is dated the 25th February 1871: "Sir, in reference to your application of the 23rd instant for continued information respecting small-pox in London, I am directed by the Registrar General to state that the particulars which you require cannot

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be furnished without inconvenience. The weekly reports published by Messrs. Eyre & Spottiswoode give all the details the Registrar General is able at present to afford." I must confess that I was very much surprised upon receiving that letter; it was the first time that the Registrar General had ever refused me information, and he has given me information for many years in the most ready manner, and had done so the week previously. The next week the figures were given in the published report as inserted in the statement which I have handed in, and the report for the week ending the 4th March states merely that the total number of deaths was 213, and does not give either the substantive figures or a per-centage. So far as that goes, I take it that that statement, incomplete as it is, is decisive proof that vaccinated people not only take the small-pox but die of the small-pox, and that they die in a very large proportion of the small-pox.

1600. How do you show that they die in a very large proportion, and what proportion do you mean; because a large proportion might mean anything beyond 50 per cent.?—What I mean is this, that as it is argued that unvaccinated people are those who are most liable to take small-pox, and most liable to die of it, that statement which I have handed in shows, upon the face of it, that that is incorrect. If we take it, as I think we may take it, as a pretty well established fact that the population of London is about half vaccinated, and half unvaccinated, or nearly so (and I think it was so stated by a Member of the Committee in the House of Commons in 1867), then I say that that statement upon its face bears this indubitable testimony, that vaccinated people do take the small-pox, and do die of the small-pox; therefore, at all events as far as those are concerned who take it and die of it, vaccination has been useless; another reason for considering that vaccination is useless, is that all the official statistics on vaccination which I have been able to lay hold of with regard to Scotland show that the Compulsory Vaccination Act, which was passed or came into operation in 1864, has been more thoroughly carried out than in any other country that I know of. The proportion of vaccinations to births in Scotland, according to the Registrar General's Report, is an average of 88 per cent. of the births, and when you allow for a certain number of children who must certainly die from different causes before they are vaccinated, we may come to the conclusion that all the children in Scotland are vaccinated, or nearly so. Now it was stated by the honourable Member for the University of Edinburgh last Session in the House of Commons, that Scotland was one of the places where compulsory vaccination had stamped out small-pox; and on seeing the report of his speech, I wrote to Edinburgh and got the supplement to the monthly and quarterly report of births, deaths, and marriages registered in Scotland during the year 1869. The total mortality for the whole of Scotland, which seems to take some time to collect, is not given here, but that for the eight principal towns. For the eight principal towns in the year 1869, the total deaths from small-pox were 51, of which 29 were of children under the age of five, all having been vaccinated.

1601. Is it stated that they were all vaccinated?—I say so from the general fact that the

statistics show that 88 per cent. of the births are vaccinated.

1602. Still there is nothing in that return to show that they were vaccinated, but your inference is, that because a large per-centage of the births are vaccinated, therefore those must be vaccinated, is that so?—Yes.

1603. Mr. *Jacob Bright*.] Have you any information with regard to any other years as to Scotland, besides that?—I have not any other report with me, but it was distinctly stated as a reason for upholding the compulsory law, that although there was some small-pox in Scotland, it was owing to the presence there of unvaccinated adults. The Committee will see that what I have said already now with regard to London, and to Ireland, and to Scotland, refers to epidemics of small-pox. Now, it has been stated, and it has been argued at very great length, that although vaccination seems to fail as a protection in epidemic times, still the more vaccination is generalized, the less small-pox there will be in times when it is not epidemic. In the year 1865 or 1866 (most likely in 1866), being interested in some circumstances which were reported to have occurred in France, I wrote to the Secretary of the Emperor to ask him if he could give me a copy of a report respecting certain things which had occurred, and he replied that that would appear appended to the general report on vaccinations, and that I must wait for it; I waited, and they very kindly remembered my request, and sent me the report in due time for the year 1865. I there found what I did not then know was in existence, that is a particular account for each department of France of the births, vaccinations, re-vaccinations, small-pox cases, and small-pox deaths. There was no summary of the thing in the report which I have with me, nor anything to guide one to a conclusion upon the face of the statistics as to whether vaccination was beneficial or otherwise; the figures are all higgledy-piggledy, to use a common phrase, and the result or the tale that they told was only to be arrived at by very considerable labour, and the performance of several hundred calculations. Having performed those calculations I drew out a table of the per-centages, showing the average proportions of vaccinations to births, and of small-pox cases to births, and also the per-centage of small-pox deaths to small-pox cases in France, taken from those French statistics, which are published under the authority and sanction of the Paris Academy of Medicine, which is also the vaccination authority, and I found that so far from those portions of France where vaccination was less practised suffering more severely from small-pox, they suffered less severely, and what is still more remarkable is this, that the proportion of deaths to cases, that is to say, the fatality of the disease, as distinguished from the mortality, was greater where there were more vaccinated persons than in those departments where there were fewer vaccinated persons. I drew those figures out, but I do not wish to draw any conclusion at all about them. I published a little leaflet, stating that I thought they showed that there was no connection of cause and effect between the two diseases, and that paper was sent to many eminent medical men, not by myself, but by a medical friend, and also to the medical papers, and I have never received, after the lapse of three years, up to this time, a single suggestion

suggestion that the figures showed anything else. It is an important point to consider and to bear in mind, that those three years are not epidemic years. With regard to one year, I have given the details in the pamphlet which I have published; with regard to the other two years, 1865 and 1866, I have given a summary. I have had every calculation checked over in a commercial office by a clerk in the ordinary way, and I believe that every figure may be taken as perfectly correct. It does not appear, from this paper, what are and what are not duplicate vaccinations. The general tenour of the whole thing is to show that it is not correct to say, with regard to any particular district of any particular country, where the circumstances are all the same, and where you have the same elements of comparison, that the more vaccination is generalised, the less small-pox there will be, or that the less fatal it will be. In some instances the prefect of the department has made a marginal note that there were so many re-vaccinations, but there are not very many of them. In one case he puts 281 re-vaccinations. He has, 5,827 in the column of vaccinations, and a marginal note with a reference, "Plus 281 re-vaccinations"; but whether they are included in the 5,827 I cannot tell, and the number of re-vaccinations is so small, that I should say it really cannot affect the general testimony of the statistics.

1604. Do you say from having gone through those Returns that the number of re-vaccinations is small?—There are not above half-a-dozen cases of marginal notes.

1605. Mr. Candlish.] You do not know that there are not some re-vaccinations in cases where there are no marginal notes?—Certainly not.

1606. Do you think those figures useful as affording a ground for a comparative statement between district and district?—Precisely; I hand in summaries of those figures as the result of those statistics published by the French Government. I do not wish to accept any responsibility for these statistics themselves.—(*The same were delivered in, vide Appendix.*)

1607. Do the summaries which you propose to put in fully exhibit the facts which you wish to lay before the Committee?—I believe so or I should not have published them. The statistics of the French Academy refer to three successive years, in which the disease of small-pox was not epidemic in France; it was before the epidemic broke out. In the French Report for 1867, Monsieur Depaul starts off with saying that small-pox has declined on account, as he says, of the generalisation of re-vaccination. He speaks of the efforts recently made to spread re-vaccination which was rather subsequent to 1867, because you will observe that the Report was not published until 1870, and Monsieur Depaul's own report was written in 1869, and he attributes the decline of small-pox to the spread of re-vaccina-

tion. Now I do not wish to show from the French statistics anything with regard to re-vaccination; but I think we have very conclusive evidence in our own country with regard to the uselessness of re-vaccination. Dr. Seaton, in his *Hand Book on Vaccination*, at page 242, has this passage: "*The power of vaccination as exhibited by 'protected' classes of the general population.*" The annual medical reports of the British Army and Navy, to which I have already so frequently referred, afford striking proofs of the protective power of vaccination in adult populations, exposed to the ordinary chances of infection of the countries in which they may be stationed. The troops serving in the United Kingdom may be looked on as, virtually, a wholly 'protected force'; for, since 1858, every recruit, whether or not he have marks of small-pox, or of previous vaccination, is required to be vaccinated on entering the service, and the soldiers who had previously enlisted, who were without proper marks of vaccination, have also been ordered to be re-vaccinated." At page 244 he gives a Table showing, for the six years 1859, 1860, 1861, 1862, 1863, and 1864, the number of troops, the cases of small-pox, the deaths from small-pox, the ratio per 10,000 of strength of the cases, and the deaths. Special attention was called in a newspaper to the fact that less than one in 10,000 per annum of the British army died from small-pox, and it was said that that was a conclusive proof of the great protection which vaccination and re-vaccination afforded; I took the trouble, from the figures I had obtained from the Registrar General from time to time, to extract the death-rate for the civil population of England and Wales, among whom vaccination is so generally neglected, and in respect of whom we have compulsory laws; and I deduct from the general death-rate from small-pox the death-rate of children under five years of age, who are certainly not in the army; and, for the whole population, male and female, from five years of age and upwards, I find that the death-rates from small-pox, when added up and the mean taken, are exactly 84 per million, and that the death-rate of the army is exactly the same, being 84 per 100,000, or 84 per 10,000. I take those figures for the same years which are given. The death-rates, the Committee will observe, are not the same in each year; but in the total they are the same, and Dr. Seaton has this sentence: "In the Tables which I subjoin, showing the results for each force and for each year, the reader will not fail to note the effect of presence or absence of epidemic influence." If epidemic influence causes the re-vaccinated soldiers of the British Army to die from small-pox, it is only natural to expect that epidemic influence will cause the general population to die from it, and if it will not protect against the epidemic influence, I argue that it is useless.

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Friday, 17th March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. Hibbert.

Mr. Holt.
Lord Robert Montagu.
Mr. Muntz
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, ESQ., IN THE CHAIR.

MR. GEORGE SLEIGHT GIBBS, re-called ; and further Examined.

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1608. *Chairman.*] ARE you prepared to put in any return with respect to the mortality from small-pox at Belfast?—Yes, I have a letter here from the Poor Law Commission Office in Dublin, dated the 16th of March 1871, with which they enclose me an extract from Mr. O'Brien's half-yearly report on the Belfast Union, dated 13th February 1871: "The chief feature in connection with the sanitary state of the workhouse at the present time has reference to the recent outbreak of small-pox in the union, which I am happy to say is now manifestly on the decline; the present epidemic may be taken as having commenced in the week ending the 26th March 1870; since then there have been treated in the workhouse in all 180 cases, of whom 115 are stated to have been vaccinated, and 65 unvaccinated; of these numbers 104 have been discharged cured, 10 have died, and 66 remained under treatment when I visited the hospital on the 9th instant; of the 10 fatal cases eight are said to have been vaccinated, but I have little doubt that in many cases said to have been vaccinated, if the facts could be traced, it would be found that this had been done in but an imperfect manner; the arrangements in force in the hospital for the isolation of these cases, are, I think, as complete as the circumstances admit of, and I think the general result of the treatment pursued there may be pronounced to have been satisfactory;" on that I have to remark that the proportion of deaths to cases among the vaccinated, according to the figures given, is 1 to 9; the proportion of deaths of the unvaccinated is 1 to 21, and the proportion on the total is 1 to 11. In continuance of my evidence I would remark that the statement which we have in Dr. Seaton's Hand-book of Vaccination with regard to the effective protection of vaccination and re-vaccination in the navy, is that whereas the deaths from small-pox per million in the army was 84, in the navy it is recorded as 230, which is three times that of the general civil population in the same years.

1609. For what year is that?—That is for six years given by Dr. Seaton from 1859 to 1864, inclusive. The next point is with regard to mitigation. Yesterday I called at the College of Physicians, and obtained a copy of the report on vaccination, which is signed by Charles West.

1610. *Chairman.*] And dated February 4th,

1871. What I wish particularly to call the attention of the Committee to in that report is the third clause, at the commencement: "But whilst the mortality from small-pox occurring in the non-vaccinated amounts to 35 per cent. of those attacked, the mortality in the case of those who having been properly vaccinated subsequently take small-pox amounts to less than 1 per cent." There is no statistical basis whatever for that assertion. Dr. Seaton in his Hand-book made this remark with regard to small-pox in the present century. He says: "We have no reason to believe that small-pox is more fatal in this century than in the last." Now what the per-centage of fatality from small-pox was in the last century is a thing not very easy to come at, for it was made a matter of controversy for a long time between the small-pox inoculators and those who opposed them. Dr. Jurin, who was a promoter of the small-pox inoculation system, somewhere or other stated the per-centage of fatality among the persons who took the small-pox in the natural way as about 2 in 11. It appears from a little pamphlet which I have in my hand, published in 1723, a letter from Isaac Massey, apothecary to Christ's Hospital, in which he controverts a letter which has been written by Dr. Jurin to Dr. Cotesworth that the proportion given by Dr. Jurin in that letter on which he is commenting is a proportion of 1 to 9 or 2 to 17. Dr. Wagstaffe, who also was an opponent of the practice of small-pox inoculation, commenting upon certain statements, says, "Besides, as it has been practised commonly upon children, it scarcely amounts to a fair trial, since hardly 1 in 100 have died of the natural sort in this season;" this is dated 1722; Dr. Jenner also has something bearing upon that point; in his book at page 49, he says, "there are certainly more forms than one" (that is, of the small-pox) "without considering the variation between the confluent and the distinct, in which the small-pox appears in what is called the natural way. About seven years ago a species of small-pox spread through many of the towns and villages in this part of Gloucestershire; it was of so mild a nature that a fatal instance was scarcely heard of, and consequently so little dreaded by the lower orders of the community that they scrupled not to hold intercourse with one another, as if no fatal disease had been present among them;" he could

could not arrive at a per-centage at all upon the matter. Mr. Abbott, a Fellow of the Society of Antiquaries, who lives in the town of Darlington, where I now live, knowing that I was interested in this subject, and being engaged in some antiquarian pursuit in the course of his peregrinations, went to Kirkby Stephen, in the county of Westmoreland; I met him a few days afterwards, and he said, "I have fallen upon something which will interest you; I had not time to copy it out, but I think if you write to the vicar he will give you every information." Accordingly I wrote to the vicar, and I have here his reply. "Vicarage, Kirkby Stephen. August 7th 1869.—Dear Sir, —The enclosed extracts from the register of this parish are probably the entries to which Mr. Abbott refers; I do not remember more of them; the parish includes several townships, of which Hartley is one.—Yours truly, James Simpson.—George S. Gibbs, Esq., Pierremont Crescent, Darlington." The enclosure is "extracted from the register of baptisms and burials in the parish of Kirkby Stephen, in the county of Westmoreland, 1755. The number of children that have had the small-pox within the town of Kirkby Stephen in 1755 are exactly 207, whereof have died only 16; above 60 children in Hartley have had the small-pox this year, and not one of them died; the whole number that have had the small-pox within this parish this year are about 350, and of that number there have died no more than 22. The above account taken by me, William Fawcett, Vicar. 1763. *N.B.*—438 have had the small-pox in this parish in the year 1763, out of which number only 35 have died; the above account taken by me, William Fawcett, Curate." The per-centage of deaths to cases is in 1755, 6·3, in 1763 exactly 8 per cent. The object of stating that is to show that as there is no reason to believe that small-pox in this century is more fatal or more severe than it was in the last century, if we have any data to show the per-centage of deaths to cases of natural small-pox in the last century, when of course everybody was not vaccinated, then we have some statistical data to guide us as to the accuracy, or otherwise, of the statement, which has been put forward by the Royal College of Physicians.

1611. I suppose you know that this parish of Kirkby Stephen is a widely scattered rural district?—I am perfectly aware of that, but I am perfectly aware also that some of the small towns in the country are in anything but what we consider in these times a good sanitary condition. We have a little modern evidence bearing upon this question, rather corroborative of what is shown there. Making all allowance for controversy in the matter, and taking the perfectly independent testimony of the vicar and curate of Kirkby Stephen, I come to the conclusion that the per-centage of deaths to cases in the last century, among the general population, was from 10 to 11 per cent. The modern evidence is in the French reports.

1612. You are not going to give evidence as to the fatality in England from the French reports, are you?—I never heard it supposed that the per-centage of fatality was much different in France from what it is here. All the generalizations on the other side have been from the particular City of London to the whole of Europe, and the whole of the world.

1613. I suppose you know that there is a great difference between the sanitary state of France

and that of England?—That may be so. What is shown in the French reports is, that in the year 1865, for the whole country, the per-centage of deaths to cases was 9 per cent.; in the 10 departments, where vaccination was least practised, it was 9·62 per cent. In 1866, the total for the country was 12·4 per cent.; and in the 10 districts where vaccination was least practised, it was 10·7 per cent. In 1867, the per centage for the whole country was 10·1, and for those 10 departments, comparatively unvaccinated, in was 9·7 per cent.

1614. What have you to show that those 10 departments are more unvaccinated than the other departments; is that stated in the return?—Yes, in those figures which I have handed in.

1615. But is it stated in the return from which you have just quoted?—Those figures are on the tables which are printed, and will appear as an appendix to my evidence. It is part of the evidence which I have already given. Another piece of modern independent testimony is recorded at page 191 of Dr. Seaton's Handbook. He says here, "From returns made to the Epidemiological Society in 1852 by 156 medical practitioners in various parts of England, who had kept numerical records of their small-pox experience, it appeared that the proportion of deaths to cases which they had met with in the natural form of the disease was 19·7 per cent., or as nearly as possible 1 to 5." I wish to refer particularly to the nature of that evidence. Dr. Seaton speaks of "returns made from 156 medical men in 1852." It appears from a Parliamentary Paper presented to the House of Lords on the 17th June 1853, that those 156 would be a part of those addressed by the Epidemiological Society, and they are described thus: "We addressed queries to the public vaccinators throughout England and Wales, and to other members of the profession whom we know to have paid particular attention to the subject." It will be obvious, I think, to anybody, that if small-pox appeared in a family in a mild kind, and the children were not vaccinated, the public vaccinator would be almost the last medical man that the parents would call in, and consequently, the general remark that numerical records of medical experience are almost always (and necessarily) in excess, as regards fatality, of what occurs in the population generally (for medical men are not called in when there is no danger, or no supposed danger) applies in this instance with double force. The next thing which bears upon it is the hospital statistics. At page 18 of the Appendix to the "Papers relating to the History and Practice of Vaccination" presented to Parliament in 1857, there is a table by Mr. Marson for 16 years, from 1836 to 1851 inclusive. "Patients admitted with small-pox." "First unprotected," and he gives the fatality of the unprotected at 35·55 percent. I wish to draw the particular attention of the Committee to the word which is used there, viz., "unprotected." Now "unprotected" is clearly an ambiguous term, because it might apply to every patient who went in. They were all clearly unprotected against the disease. The public do not understand that special limitation which has been put upon the term "unprotected." On pages 19 and 20, Mr. Marson explains the special limitation. He says here, "Patients were never entered in the register as vaccinated unless the account of the vaccination was a tolerably clear one, either from the patient's own recollection, or the account received of it

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from his or her friends; their belief that it had taken effect properly, and their trusting to it as their protection against small-pox. The only exceptions to this statement were 1st., those who had the usual vaccine cicatrices on their arms, but knew nothing of having been vaccinated; 2nd., patients who were admitted while under vaccination; they were considered, at whatever stage the vaccination had arrived, as unprotected, and entered accordingly." Now it is quite clear from that, that if a patient is taken to the hospital in a state of confluent small-pox, the nature of which disease is to obliterate all marks whatever on the skin, and if he is not able from his own recollection, or from the recollection of his friends to give something like a proper account or legal evidence of the fact of his having been vaccinated, he would be put down in the class of unprotected. But the other point is still more important, because Mr. Marson includes in the "unprotected" class all those cases where cow-pox and small-pox are present at the same time in the same person; to which class of facts I shall have occasion to allude hereafter, so that Mr. Marson does not say, as he has been often made to say, that the unvaccinated persons at his hospital died in the proportion of 35.55 per cent. There is another little piece of independent evidence which I came across, and which is interesting. In "Chambers' Cyclopædia," published in the year 1779, in the article "Inoculation," the writer defending the practice of inoculation has this sentence: "From a general calculation it appears that in the hospitals for small-pox and inoculation 72 die out of 400 patients having the distemper in the natural way, and only one out of this number when inoculated." The per-centage according to that general calculation is 18 per cent. on the cases. Now here is Mr. Marson's table in which he gives the ratio of mortality from small-pox on the whole number of patients unprotected and vaccinated, and the proportion is 19.97 per cent. The whole fatality in the hospital is very nearly 20 per cent. as against 18 per cent. in the last century.

1616. Mr. *Candlish*.] What is the definite idea of the word "protected," as distinguished from the word "vaccinated"?—I think I cannot give any better definition than that which is given by Mr. Marson, which I have already read. I shall not offer any more remarks upon the assertion that the deaths of the unvaccinated, as applied of course to the general population, are at the rate of 1 to 3, or 35 per cent.; but I wish to make some remarks about the other end of the statement, where the College of Physicians say that the fatality among the vaccinated is less than 1 per cent. You have already some evidence upon that point.

1617. *Chairman*.] Do they use the term "vaccinated," or "properly vaccinated"?—They use the term "properly vaccinated." I may remark that, as a layman, I really do not know what that may be. Dr. Ballard, in his essay, describes vaccination as "a pathological substitute" for small-pox. The argument which I am about to adduce now is this: that if persons who take small-pox a second time are shown or seem to die at a rate per cent. (no matter what), it is not reasonable to expect that persons who have passed through the cow-pox shall die at a less rate, because that would set up the theory that vaccination, considered as a pathological substitute for small-pox, was more powerful than the thing

itself, an idea which Dr. Ballard distinctly repudiates. To refer again to Dr. Seaton, at page 198, he says, with regard to Dr. Jenner's opinion as to the degree of protection which vaccination afforded: "The protection which vaccination would afford against small-pox was held by Jenner to be exactly that (neither more nor less) which an attack of small-pox, either taken naturally or induced by a completely successful inoculation, would confer against a subsequent attack of the same disease." That is perfectly clear. I wish also to put in evidence a statement made by Dr. Farr in the 31st Annual Report (1870), in his letter to the Registrar General. At page 198 he makes this remark, under the head of "zymotic diseases": "small-pox is largely under control, inasmuch as a vaccinated population enjoys the kind of immunity which small-pox confers against future attacks." That sentence seemed to me to be a little ambiguous, and I wrote to Dr. Farr to ask him whether it was a correct construction to put upon that to say that a person who had had the cow-pox was as little likely to contract the small-pox, and if he did contract the small-pox, was as little likely to die of it as a person who had already gone through the disease; and he replied to me that he was not prepared to answer an important question offhand. I wrote to him again to say that I merely wished to know whether what some of my friends maintained was quite clear was a proper construction of his words; but I have not been able to get a reply from him. Now we proceed to the particular evidence which exists (which is not a very great deal) as to the fatality of small-pox after small-pox. At pages 203 and 204 of Dr. Seaton's Hand-book, he says that "Haeser states, on the authority of Regoni Stern, that at Verona, in the 10 years 1829-38, 24 cases of second small-pox had been noted, eight of which were fatal; and Heim reports, in the epidemics in Würtemberg, 1831-5, 57 cases of recurrent small-pox, of which 16 died; and in subsequent epidemics, 86 cases, 12 of which were fatal;" adding those together, as I have done here in margin, the proportionate fatality of those three lots is 21.5.

1618. But have you any statistics upon that subject from our own country?—Yes, I think so; the next which I have to mention is contained in Mr. Marson's paper of the Small-pox Hospital for the 16 years as before; it appears from that that he had 14 cases after natural small-pox, and 27 cases after inoculated small-pox; that is to say, 41 cases altogether out of a total, I may remark, of 5,797, of whom 3,094 were classed as vaccinated, which shows that having small-pox appears very largely to protect the person from contracting the disease.

1619. Is there anything to show that any of these cases were fatal?—Yes, he tells us that 8 of these 41 cases were fatal, that gives a percentage of 19.5; as I mentioned the evidence is rather small, because there are not many cases; this book which I hold in my hand is a book which is often referred to, Bousquet's book: At page 194 he gives some cases; "altogether 34 cases after small-pox, of which five were fatal," and at page 326 he gives 212 cases, of which 15 were fatal; adding those together we have 20 fatal cases out of 246, being a per-centage of 8 per cent. In the cases recorded by Dr. Seaton the fatality is 21.5 per cent.; in Mr. Marson's paper it is 19.5 per cent.; the cases recorded by Bousquet are 8 per cent. The total cases are 454,
total

total deaths 64, or 14.1 per cent. I think it is pretty fair to conclude from these figures that the fatality of small-pox after small-pox is 10 or 11 per cent. Now I wish to call the particular attention of the Committee to those cases which are included by Mr. Marson among the unprotected, namely those of concurrent cow-pox and small-pox. Dr. Ballard records a number of cases which have been collected both in this country and on the continent, and adding up the total he shows that there was a fatality of 15 per cent. among those persons who had the cow-pox and the small-pox at the same time on their bodies; that fact alone appears to some persons (and it does so to me) to be very conclusive evidence that vaccination does not and cannot mitigate the attack of small-pox, because if the cow-pox poison then and there present in the system cannot or does not exercise any influence in mitigating the course of the disease, it is not rational to expect that after the poison has been in some degree eliminated it should exercise any beneficial influence; in 1866 when there was an epidemic of small-pox in London, Dr. Charteris, who was then assistant surgeon to St. Giles's Infirmary wrote a letter to the "*Lancet*," in which he recorded several cases in which he had vaccinated children who were exposed to the epidemic influence of small-pox; and he states that in eight cases the results were fatal, and that in the cases of seven other children upon whom he had purposely and distinctly, on account of those fatalities, abstained from operating, all went through the disease favourably, and recovered.

1620. Where do you obtain that?—That is in his letter, published in the "*Lancet*" of July 28th 1866. I think that I have now completed all that I have to say of the uselessness of vaccination in mitigating or preventing small-pox.

1621. Do you consider that the introduction of vaccination caused a decrease of the small-pox mortality?—Most certainly I do, and I should be very much surprised if it did anything else. It has been stated many times that the proportion of small-pox deaths per million of the population in England was 3,000; it is not very clear at what time it was that that proportion was stated; Dr. Lettsom is generally the authority which is referred to on that point; his words at page 31 of his "*Observations on the Cow-pox*" second edition are: "In London and its environs there are about one million of inhabitants, of whom about 3,000 die annually by the natural small-pox, or about 36,000 in Great Britain and Ireland."

1622. What is the date of that book?—This book is dated 1801; Dr. Seaton, at page 189 of of his book, says that Dr. Lettsom is confirmed by Sir Gilbert Blane, and he referred to the evidence at length published by the Rev. G. C. Jenner, which book I have before me; Dr. Blane says: "I calculate the whole annual deaths from small-pox in England and Wales to be 22,840, and reckoning Scotland and Ireland together to be half the population in England and Wales, the total annual mortality in the United Kingdom from this disease will be 34,260"; I just mention this to show that the estimates were rather exaggerated.

1623. Mr. Candlish.] Is the proportion given there?—No; Dr. Farr in his last Report publishes a very interesting Table, in which he gives the estimated population in the United Kingdom in 1801 as 15,900,000. When we divide that

34,260 into the 15,900,000, the proportion per million is 2,155, and not 3,000; so that I think it is not quite correct to say that Dr. Lettsom's calculation is accurate. We have then to consider that this small-pox mortality was not the effect of small-pox naturally, and left to itself. Sir Gilbert Blane (or Dr. Blane as he was then) tells us that "according to the London Bills of Mortality for the last 30 years of the late century, on an average 95 persons died of small-pox out of each 1,000 reported in the Bills. By a similar calculation there died in the first 30 years of the last century 70 only of each 1,000"; and he goes on to explain that that was due to the introduction of inoculation. He says, "this probably holds true to a still greater degree in the country, for before the introduction of inoculation there were certain districts in which the small-pox was unknown for 20, 30, and 40 years, so that great numbers lived and died without ever having had the small-pox. This is no longer the case since the general dissemination of small-pox from inoculation." Dr. Jenner, in a Paper which was received from him in 1802 by a Committee of Parliament, on his petition, states that, "on inquiry it appeared that it" (that is the cow-pox) "had been known among the dairies time immemorial, and that a vague opinion prevailed that it was a preventive of the small-pox. This opinion I found was comparatively new among them, for all the older farmers declared they had no such idea in their early days; a circumstance that seemed easily to be accounted for, from my knowing that the common people were very rarely inoculated for the small-pox till that practice was rendered general by the improved method introduced by the Suttons, so that the working people in the dairies were seldom put to the test of the preventive powers of the cow-pox." The historian of small-pox and vaccination, James Moore, has a very striking passage in which he explains with regard to the small-pox inoculation, how this infliction of the disease caused it to spread by infection or contagion; and he is very severe upon them, and says that by the neglect of proper precautions in isolating those patients on whom they operated they sacrificed millions of lives. Now, when the practice of small-pox inoculation was discontinued, if it caused the sacrifice of millions of lives, its discontinuance must of course have saved millions of lives. That is most remarkably illustrated in the case of Sweden. In the year 1754, Dr. Schultz came over to this country, and was in communication with the heads of his profession, and on his return home (that being the year in which the College of Physicians declared that the practice of small-pox inoculation was highly beneficial to mankind) he was so much impressed with the same idea, and being apparently a man of some influence with his Government, he actually got the practice of small-pox inoculation made compulsory in Sweden. When the practice of vaccination was promulgated, the Swedish people had really had about enough of small-pox, and they were very glad indeed to take to anything to get rid of it, and the Government took it up very vigorously and made vaccination compulsory, and prohibited the practice of small-pox inoculation. The effect was this, that as the small-pox ceased to be propagated, and almost all the persons then alive in Sweden had had the small-pox, either naturally or by inoculation, there were no persons upon whom the

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natural epidemic influence, supposing it to exist (for it does not exist always) could operate. That is very striking and there are similar striking contrasts to be found especially in the towns of Germany where the same thing was done. There they had compulsory small-pox inoculation, and on the introduction of vaccination small-pox inoculation was prohibited, and the same result of an immense contrast was to be seen. But there is one country where there is no such contrast. Moore tell us in his history of small-pox, that in Spain inoculation was introduced and practised in Barcelona and another town, the name of which I forget; that the Spaniards did not approve of it and it did not extend in that country at all, and he makes use of this very curious phrase, "That their distinguished mental apathy on this occasion proved of service to them, for no other country in Europe suffered so little from the small-pox." When vaccination came into vogue the Spanish Government received it with open arms, and did whatever they could to promote it, and indeed a good deal more than some, for they actually caused a Spanish ship of war to be fitted out, and they put on it Dr. Francis Xavier de Balmis with 22 children, with the aid of whom he could keep up a supply of vaccine poison, and sent him off to circumnavigate the globe, to put, as they called it, a vaccine girdle round the earth; and it was he who performed the first vaccination in the English colony of St. Helena; but there is no great contrast to be found as regards Spain, for there was no small-pox before that time, comparatively. Then Boston, New England, is another place from which we cannot get anything of that kind. When Mr. Maitland (who was the introducer of small-pox inoculation) or one of his colleagues went there, he was faced by a gentleman there of the name of Dr. Dollond. Dr. Dollond told him that he must not come there to practice inoculation, that it would be as much as his neck was worth, and he said Why? and he was told because poisoning was a capital offence according to the laws of the British Empire; and lest it should take at all in the minds of the people, Dr. Dollond got the select men of Boston to prepare a bill, and to make it a law that it should not be practised there. I wish to call attention now to our own country. In a return presented to the House of Lords on the 17th of June 1853 by the Epidemiological Society, there is given a list of the small-pox deaths per 1,000, in periods of 10 years from 1650 to 1840. It will be seen from that that on the introduction of vaccination, that is from 1800 to 1810, where there was no immediate action taken with regard to the suppression of inoculation, the decline of the small-pox mortality was very gradual, and small-pox being an epidemic disorder, and one of those peculiar disorders which are perhaps more particularly amenable to improvements in life and sanitary regulations than most others, the gradual decline of the small-pox mortality is only to be expected and not to be attributed to the prophylactic virtues of vaccination. The diminution of the small-pox mortality is due to the giving up of the practice of small-pox inoculation and the gradual disabuse of the public mind of what was promulgated as a theory for 100 years, that everybody was obliged to have the small-pox at sometime or other, an idea which I should say caused a very great part, perhaps one-fourth of the small-pox mortality which has occurred within these last two or three centuries.

1624. But how could that have caused the small-pox mortality, because an idea does not generally cause mortality?—If it is acted upon it may do so.

1625. How do you mean?—I mean this: that supposing the mother of a family is fully impressed with the idea that her children must have the small-pox at some time or other, she will be anxious to get that danger over as soon as possible, because it is a patent fact that persons very seldom have the small-pox a second time, and when small-pox occurs, supposing that she does not approve of the practice of small-pox inoculation, she will not withdraw her children from the influence, contagious or infectious, or whatever you choose to call it, of the disease which may be then and there present.

1626. Does the same idea exist with respect to other epidemic diseases, such as scarlet fever?—I should expect that if anybody were infatuated enough to propose a system of inoculation for scarlet fever he would immediately promulgate the idea that everybody must have the scarlet fever some time or other, or else his disciples would be exceedingly few.

1627. But mothers do not put their children in the way of infection in the case of scarlet fever and other diseases of that kind, do they?—No; because they have not been fully impressed with the idea that they were obliged to have the disease.

1628. Mr. Muntz.] Is it not a general impression among the population that every child must have the measles?—It is not a general impression as far as my circle of acquaintance is concerned; if it is a general impression the sooner it is done away with the better, for the mortality from measles is very large.

1629. Chairman.] Would you consider that vaccination, as generally practised, increases the general mortality, and especially infant mortality?—Certainly.

1630. What are your reasons for that opinion?—The reason why I think so is this: I have drawn out here a statement of small-pox mortality for England and Wales among persons of all ages during 30 years, from 1839 to 1868 inclusive, taken from the Registrar General's figures. (*The same was delivered in. Vide Appendix.*) It appears from this table, that during the 15 years from 1839 to 1853, both inclusive (there being four years from 1843 to 1846 inclusive, for which figures are not attainable), the average death-rate per million from small-pox was 362; and for the subsequent 15 years for which the figures are complete, the mean death-rate was 184. The gain in the later period, as shown by the difference of mean death-rates, is 178 per million of population, equivalent on 20 millions to an actual diminution of mortality of 3,560 per annum, and in the 15 years, 53,400. I have taken the round figure of 20 millions as 1861, the census year is in the middle of the series, and the census population was 19,900,000 in March 1861, so that 20,000,000 would as nearly as possible be correct for the purpose. It appears from that that there is a gain on the small-pox mortality for those 15 years; and Mr. Robert Rawlinson, C.B., C.E., in his Address to the Social Science Congress at Newcastle, stated that under the Local Government Act there had been since 1858 (which I think was the date of that Act), eight millions of public money, and as much more private or local money spent on sanitary

tary improvements throughout the country, exclusive of the metropolis. I do not know what the expenditure in the metropolis is, but there is a gain on the tables from small-pox, and there ought to be a very considerable gain from this expenditure, because it has been shown over and over again that those local improvements have effected an improvement on the local death-rate. But when we turn to the table of death-rates for the whole country from all causes, instead of finding an improvement and a decrease in the death-rate, we find a slight increase for England and Wales. The mean death-rate for the 15 years as before, is 2,238 per 100,000; and for the second 15 years it is 2,242 per 100,000. The loss in the latter period, as shown by the difference of the mean death-rates, is 40 per million of the population, equivalent on 20,000,000 to an actual increase of mortality of 800 per annum, and in the 15 years, of 12,000. That is the statistical statement with regard to the population of all ages. (*The same was delivered in. Vide Appendix.*) With regard to infant mortality from small-pox, I have prepared another table. This table of the mortality from small-pox among children under five years of age is rather more incomplete than the other. The Registrar General has the causes of death abstracted for the whole population for the years 1839 to 1842, but he has not got them abstracted for the ages, so that this table is defective up to 1847 for that reason; but I do not know that it would affect the result much. The mean death-rate, then, for the seven years from 1847 to 1853 inclusive is 216 per million, and the mean for the 15 years following is 103 per million. The gain in the latter period, as shown by the difference of the mean death-rates, is 113 per million of the population, which is equivalent on 20 millions to an actual diminution of mortality of 2,260 per annum, and in the 15 years of 33,900. With the permission of the Committee I will hand in that table. (*The same was delivered in. Vide Appendix.*) We come now to the general mortality among children for the 30 years, the table being complete. The mean death-rate in the first period, from 1839 to 1853 inclusive, is 8,816 per million, and in the period from 1854 to 1868 inclusive, it is 9,178 per million; the loss in the latter period, as shown by the difference of the mean death-rates as 362 per million of population, equivalent on 20 millions to an actual increase of mortality of 7,240 per annum, and in the 15 years, 108,600. I will hand in that table also. (*The same was delivered in. Vide Appendix.*)

1631. From the tables which you have put in, you wish to show that the general mortality, and also the infant mortality, has increased since vaccination was introduced?—Yes, especially infant mortality; for if it had not been for the increase of infant mortality there would have been a decrease of the general mortality, and those sanitary engineers, and the persons who take an interest in their operations, would have had the satisfaction of seeing a decrease of the general death-rate instead of seeing an increase.

1632. Have you given attention to the difference in infantine mortality between town and country?—I have not.

1633. I suppose you are aware that the death rate in large towns amongst infants is very considerably greater than it is in the country districts?—I am not aware that it is any greater now than it

was before 1854. Almost all the improvements which have been made in sanitary arrangements have been made in towns, and I should expect that the infants would have the benefit of breathing purer air and drinking purer water, and so on; and that they ought to partake of the benefits which are partaken of by the adults.

1634. Is it not the case that in the large towns mothers are more generally employed than they were previously to 1854?—I am not aware of that circumstance at all, and I doubt whether that is the case.

1635. Mr. *Candlish.*] To what do you attribute the increased mortality among infants?—I attribute it to their being poisoned in the first year of life in a very much greater proportion than they used to be.

1636. By vaccination?—By vaccination. I estimate the total loss of infant life from the practice of vaccination to be 28,500 per annum in England and Wales. I will explain to the Committee how I arrive at that conclusion. The increase of the general mortality of children under five years of age, as shown by the table which I have given in, is 7,240 per annum. In the same period for which that table is constructed there was a diminution of small-pox mortality of 2,260, which, added to the 7,240, gives 9,500 as the difference.

1637. Dr. *Lyon Playfair.*] You add a hypothetical quantity, do you not?—No, I add a statistical quantity.

1638. *Chairman.*] You say that you take 7,240 as the total increase of infant mortality under five years of age?—Yes, from the tables; but there ought to have been an improvement or a saving of the life of children from the decline of small-pox of 2,260.

1639. Dr. *Lyon Playfair.*] Is not that a hypothetical quantity?—Certainly not, it is a statistical quantity.

1640. *Chairman.*] You state, do you not, that 2,260 is the diminution of small-pox mortality amongst children under five years of age for the periods given in the paper which you have put in?—Yes.

1641. And you propose to add the diminution of mortality from small-pox to the general increase of infant mortality?—Certainly.

1642. Dr. *Lyon Playfair.*] Are you not adding a *minus* quantity to a *plus* quantity in that way?—Certainly we add the *minus* to the *plus* to get the difference, which we cannot do otherwise.

1643. Lord *Robert Montagu.*] You drop the *minus* sign and you change it into a *plus* sign?—Not so; the difference per annum in the way which I have taken it, which I think you will find to be right, is 9,500 per annum; now, as to what is the increase of infant vaccination at one period as compared with the other, is not very easy to arrive at, but the statistics or the figures which have been put forward by the Privy Council Office, and subsequently by the Poor Law Board, give me a reason for taking the per centage of vaccination to births in the first period at 50 per cent. and in the latter period at 75 per cent.; the increase of infant mortality in the latter period is due to the increase of vaccination; the total loss then by vaccination is the equivalent of the total vaccination, which is three times the increase; then multiply the loss on the difference of the annual mortality due to the increase by three, and it gives you 28,500 children per annum who are sacrificed within the first year of life by the

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the practice of cow-pox poisoning; in the 15 years then, during which this has been going on, we have an infant mortality caused by this practice of no less than 426,500 without the slightest benefit accruing to the nation in any way whatever, unless it be argued that it is a benefit to diminish the population; that is what I have to say on the question of general mortality and infant mortality.

1644. *Chairman.*] Do you consider that the effect of vaccination upon the general health of the community has not been beneficial?—Certainly; that is a question apart from the mortality caused, because the introduction of morbid matter into the system does not necessarily kill the person who is thus inoculated within the first five years of life; and, therefore, we have to suppose, or we may generally argue, that the maleficent operation of it continues beyond that period; I myself think that more damage is done to the community by the fact of this morbid matter remaining in the persons who survive than by the mere killing of the persons who die, because, if constitutional diseases may be introduced in this way they will be perpetuated from generation to generation.

1645. Then would you consider that vaccination induces not only an increased mortality, but that it predisposes the person vaccinated to other diseases?—It is not exactly that it pre-disposes to other diseases but that it actually causes other diseases.

1646. I presume you do not mean to say that it causes diseases in every person vaccinated?—I think I have very high authority for saying that every person properly vaccinated is necessarily diseased.

1647. What do you mean by being diseased?—That the foundation is laid of tubercular disease of one kind or another.

1648. Then from that argument you would say that vaccination seriously affects the health of every person properly vaccinated?—Certainly.—That there are many abortive operations; that there is a little local inflammation, and a local sore, which perhaps in a vast number of cases do not produce any constitutional effect upon the person I can quite understand; but if the constitution is affected it must be affected injuriously because the person is in the first instance in a state of perfect health, otherwise the vaccinator is guilty of a misdemeanour as far as his practice is concerned, in operating upon that person. It has been denied over and over again (and I was very much surprised to see a constructive denial in the Twelfth Report of the Medical Officer of the Privy Council) that the disease of syphilis is communicated by vaccination, that is to say, by vaccination as practised; of course, a theoretical vaccination is the infliction upon the healthy person merely of cow-pox.

1649. Do you wish to speak from your own experience of the disease of syphilis being induced by vaccination, or do you merely speak from hearsay?—I have seen the case of a child suffering from secondary syphilis, it having been inoculated from a child to which the parents objected particularly, and the vaccinator insisted that no harm could be done, taking for his guide the dictum of Bousquet that vaccine lymph may be taken from an itchy, rickety, scrofulous, or syphilitic subject, and inoculated upon another without producing anything but the cow-pox. Taking that for his guide, he over-ruled the

objection of the parents, and I saw that child in a state of secondary syphilis for which he was giving it specific medicines. But the whole question as to the inoculation of syphilis by vaccination is argued out fully in Dr. Ballard's book, and it cannot be denied that syphilis is transmitted occasionally from a vesicle which cannot be distinguished from a true Jennerian vesicle.

1650. You state that it cannot be denied, but I suppose you are aware that a very large number of medical men, the most celebrated in Europe, deny that?—I am aware that they have denied it; but when did they deny it? They denied it in 1856. The most celebrated man in Europe, Ricord, denied it in 1856, but in 1862 he begun to doubt, and in 1863 he declared that his mind was changed; and in this Twelfth Report of the Medical Officer of the Privy Council I find his name actually as asserting that there was negative experience.

1651. *Dr. Lyon Playfair.*] Will you give us the reference to where Ricord denied it in 1863?—This is a copy of a letter which I wrote to the Right Honourable Henry Austin Bruce respecting the Vaccination Bill of 1816: "In 1862 Professor Ricord delivered a lecture at the Hotel Dieu in Paris, and he made use of these very remarkable expressions. After reviewing one case he says, 'It is not impossible that the disease was transmitted with the vaccine lymph, but in the estimation of facts which seem to establish such transmission, it is necessary to distrust the evidence of our senses.'" That is taken from the *Journal of Practical Medicine and Surgery* for February 1862, Article 6164.

1652. *Chairman.*] Was he referring there to any particular case?—Of course, he was referring to one case.

1653. *Dr. Lyon Playfair.*] Was he referring to the Rivalta case?—No. Then he makes use, in the same lecture, of this expression: "Let us admit a careful inquiry into these cases, and let us guard against any pre-determined notions on the subject; but as to the interpretation offered, let it be received with an amount of hesitation and doubt, increased by the obvious fact, that if ever the transmission of disease with vaccine lymph is clearly demonstrated, vaccination must be altogether discontinued; for in the present state of science we are in possession of no criterion which may permit the conscientious practitioner to assert that the lymph with which he inoculates is perfectly free from admixture with tainted blood." But a year later, on the 19th of May 1863, at the Academy of Medicine, he makes use of this expression: "At first I repulsed the idea that syphilis could be transmitted by vaccination. The recurrence of facts appearing more and more confirmatory, I accepted the possibility of this mode of transmission, but I ought to say with reserve, and even with repugnance; but to-day I hesitate no more to proclaim their reality." I quote that from the *Journal des Connaissances Médicales* of 10th March 1865. The first and second passages came from Article No. 6164, in the *Journal of Practical Surgery* of February 1862. I think that in the face of that, any amount of negative experience, which means an experience of nothing, and of course can be paraphrased into perfect ignorance, cannot be allowed to weigh against a declaration of that sort and positive observations. But very great argument, and very great stress have been laid upon the inoculation of this particular

cular disease, and it has been stated that it is a latent hereditary disease; that is to say, a child is apparently healthy, and it has still in its system the germs of a constitutional disease which the abnormal action of the animal poison put into the arm brings to a focus, and causes a secretion there, which is a foul secretion which can be taken and inoculated; now of course I may be wrong, or I may be right, and that is for the Committee to determine; but I argue, that if one constitutional disease, thus hereditary, and thus latent, can be thus transmitted, then every disease which is hereditary can be transmitted in the same way, because the disease is hereditary in consequence of secretions from the blood transmitted to the offspring; and those are natural secretions, and the unnatural secretion, of course, must have the same force and effect. The name of Dr. Henry Lee has been mentioned as one who disbelieves in this transmission of syphilis; that he did disbelieve in it is quite true, but that he does so now is not true, for after certain occurrences on the Continent he delivered a series of lectures in which he declared that the facts were such that they could not possibly be resisted, although some persons did cling to the old belief in spite of the recantation of their great master (as he terms him) Ricord. The authority of Dr. Lee is contained in his lectures which were published in 1863; he delivered a series of lectures *à propos* of the celebrated case.

1654. *Chairman.*] I do not know whether you heard the evidence the other day of Dr. Garth Wilkinson with respect to a case of syphilis breaking out in a child which was unvaccinated, and whose parents had shown no taint of syphilis at all. I suppose you admit that children who are unvaccinated may have syphilis just as much as children who are vaccinated?—I do not see how a child can have hereditary syphilis if he does not inherit it.

1655. Did you hear the evidence which Dr. Wilkinson gave?—I heard him say something of that kind, but I have not read the evidence; that is to say, he set up a theory that hereditary diseases sometimes skipped a generation, but I think that is rather apart from it.

1656. I suppose you think that it does not support your theory?—I wish it to be perfectly understood that I do not wish to set up any theory. Having myself observed a case of secondary syphilis communicated in the way which I have stated, I thought it a very extraordinary thing indeed that Monsieur Ricord should say, as he says in this book (papers, &c.) that it was impossible; but of course Monsieur Ricord was on one side (and he was a great authority) and I was on the other side, and I was no authority, and I was obliged to hold my tongue. But when the great authority comes to confirm my fact I have a right, as I say, to insist that his authority shall be acknowledged in one case as it was in the other.

1657. But you mentioned one case which had come to your own knowledge, in which that disease had appeared; and I mentioned another case in which it appeared, which was brought out in evidence by Dr. Wilkinson the other day, the one being produced by vaccination, and the other being that of a child who had never been vaccinated; I suppose it is fair, if you give evidence as to one particular case, to consider also the other?—If, on a collection of facts, you could find a million cases of hereditary syphilis appearing after skipping a generation, and you could

only find a hundred cases of syphilis transmitted by vaccination, then I should say that there was a balance in favour of the former case.

1658. *Mr. Candlish.*] Do you consider that Dr. Wilkinson's case conflicts with yours at all, as a mere matter of fact?—Not at all.

1659. Then they may be both true, may they not?—Certainly; I am not here to theorize, but I am merely here to bring certain facts to the Committee's knowledge, upon which they must theorize, for they are to construct the report.

1660. *Chairman.*] You stated that the disease occurred through vaccination; I asked you whether you had heard the case stated by Dr. Wilkinson, of the disease having occurred in a child who had not been vaccinated?—Yes. It has been often denied and often supposed that consumption resulted in some cases from vaccination. I myself think that that is now scientifically demonstrated, and that the experiments which have been made in the inoculation of tubercular disease by Villenin and others, confirmed by medical men in this country and on the Continent, and especially by Dr. Wilson Fox, show that the inoculation of vaccine lymph upon the adenoid tissue will cause tubercles to form upon the vital organs; and therefore, when an operation of that kind is effective, it must lay the foundation of tubercular disease.

1661. Have you any evidence of any particular case of your own knowledge?—I am not an operator; I only say that Dr. Wilson Fox has published a lecture, in which there is a table, in which he gives the results of the inoculation of certain things upon the bodies of animals on which he experimented. In that list is vaccine lymph, and the results (which he calls "the successful results") in the case of vaccine lymph are as great, and apparently greater, than those which he obtained from the inoculation of tuberculous matter itself.

1662. *Dr. Lyon Playfair.*] I wish to know exactly how your calculation of 28,500 deaths arises. You said, did you not, that there was an increase of general mortality of 7,240 per annum upon an average of 15 years?—Yes.

1663. And that there was a decrease of small-pox mortality (which is a *minus* quantity) of 2,260?—Yes.

1664. What are your exact reasons for adding the *minus* quantity to the *plus* quantity; did you ever know a *minus* quantity added to a *plus* quantity in this way?—Certainly; supposing that no cause existed for any alteration in the infant mortality, except that small-pox prevailed less; small-pox prevailing less there would be a diminution of mortality of 2,260, and that diminution would appear in the Tables as a diminution.

1665. That decrease of small-pox mortality occurred after compulsory vaccination, as I understand?—Yes, it occurred after compulsory vaccination.

1666. Do you consider that it was due to vaccination?—Certainly not.

1667. Supposing that others did consider the decrease due to vaccination, would they consider that you were justified in making the calculation as you have done?—It would not affect the question at all.

1668. But would the promoters of, and believers in, vaccination admit that the decrease produced by vaccination ought to be added to an increase of mortality?—Yes; they ought *à fortiori*.

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Mr. *tiori*. If they say that by vaccination they have diminished the mortality by 2,260, we ask them, where are they?

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1669. Would they consider it right to add that decrease to the increase of mortality which you derive from vaccination?—I do not know what they would do, but I know what they ought to do.

1670. Why did you multiply that 9,500 which you considered you got in that way by three?—Because up to 1854, and before vaccination was made compulsory, I estimate, according to the best information that I can lay hold of, which is not of a very exact statistical nature, that the proportion of vaccinations to births was 50 per cent., and afterwards 75 per cent., then the increase of mortality is due to the increase of vaccination.

1671. But what is the difference between 50 per cent. and 75 per cent.?—Twenty-five per cent., of course; it is one-third of the total.

1672. And, therefore, it being one-third of the total, you multiply by three?—Yes.

1673. Should you not multiply by three and divide by two?—No.

1674. Why not?—Because as the increase of the vaccination is to the increase of the mortality, so is the total of the vaccination to the total of the mortality.

1675. That is to say, the increase of vaccination is one-third, not two-thirds?—No, the increase is one-third.

1676. And, therefore, you multiply by three?—Certainly.

1677. I think you should have multiplied by three and divided by two. Now we will go to another point; you have handed in a table showing the ratio of deaths from small-pox amongst troops and amongst the civil population, and the ratio in the one case is for the general population from five years old and upwards, is it not?—Yes.

1678. And the ratio of the troops is, of course, adults?—Yes.

1679. You are aware, of course, that the promoters of vaccination believe that vaccination is protective up to the age of puberty?—I have heard so many opinions as to the amount of protection and how long it lasts, that I really cannot say; I have heard some people say so.

1680. Are you aware that the general impression is that vaccination is protective up to the age of puberty, whatever the views may be beyond that?—I do not know that that is the general impression; the opinions which I have heard among the promoters and upholders of vaccination are so various and so conflicting, that I really could not say what was their general impression.

1681. Supposing that we have it in evidence that the general belief is that it is protective up to the age of puberty, do you not, by taking the mortality up to the age of five years, include a large portion of the protected population?—Certainly not.

1682. Why not?—Because all the statistics we have on the subject show that the small-pox impinges more particularly upon young persons.

1683. But supposing that it is stated (and that will be for evidence afterwards) that 90 per cent. of the population is vaccinated, and that the protection of that vaccination lasts until the age of puberty, will you not, in the period between five and 15 years of age, have a very

large proportion of the protected population in your civil population?—Yes.

1684. Will not that, therefore, very largely decrease the ratio of mortality at those ages, as compared with the army, which is an adult population?—No.

1685. Why not?—Because the Registrar General has shown, over and over again, in his published Reports, that the small-pox mortality diminishes as age advances.

1686. Can you supply a table of the ratio of mortality at like ages in the civil population and the military population, between the ages of 15 and 45 in each case?—I should be very happy to do so if I had the data.

1687. Will you try and obtain the data?—Certainly.—(*vide Appendix.*)

1688. Would not that be a fairer comparison than a comparison of the mortality in the civil population, between the age of five and ultimate death, with the mortality in the case of the army between the ages of 18 and 45?—Yes, I am quite willing to furnish that information.

1689. You have handed in some tables with regard to the statistics of France as to small-pox deaths. Are you aware that there are the most extraordinary differences between the mortality from small-pox at different ages in France, and the mortality from small-pox in all other vaccinated countries?—I am not aware of the fact.

1690. Do you know this diagram of the mortality at different ages in France, in Geneva, in London, and in England (*showing a diagram to the Witness*)?—I think I have seen that before.

1691. Taking London and Paris as two towns in similar periods, the proportions of 1,000 deaths of small-pox at different ages are the following:—under five years of age 685 of the total 1,000 deaths occur in London, while 340 occur in Paris under five years of age. Between 20 and 30 years of age 85 deaths occur in London and 330 in Paris. Is it not the case that the deaths at different ages in London and in Paris, or in England and in France, are entirely different in ratio?—Yes, according to that statement.

1692. In one case one-eighth of the number of deaths occurs between 20 and 30 years of age, and in the other case very nearly half the number occur between 20 and 30, do they not?—Yes.

1693. Are you not aware that the attention of the French Government has been directed to this, and that there is considerable doubt whether there is not a very bad system of vaccination in France, to produce a result so different from that which has been produced in all other countries?—I daresay that that is so.

1694. Are you aware, for instance, that the attention of Michel Chevalier, the great statistician in France, has been drawn to the extraordinary difference between the results of vaccination in France, and its results in other countries, and that it is proposed to inquire whether the lymph, and the whole system of vaccination in France is not bad?—I was not aware of that interesting fact. Perhaps I might be allowed to remark that the tables which I have put in, with respect to France, refer to the whole mortality for all ages, and therefore any difference of age can scarcely affect the whole question.

1695. With regard to the increase of infant mortality in late years, are you aware that many investigations have been made into the causes of the increase of infant mortality?—Yes.

1696. Did you ever happen to read a report which

which I wrote as a blue book upon the state of health in the large towns in Lancashire?—No; I cannot say that I have read it.

1697. Are you aware for instance, that in that report a great many causes of infantile mortality (before this question of vaccination arose at all), were pointed out as existing in those large towns, that report being dated in 1846; for instance, are you aware that a great deal of it was attributed to the system of nursing, on account of mothers going to factories, and to the large use of laudanum and other means of quieting children who were thus given out to public nursing?—Then the public attention being drawn to that fact, ought to have operated to effect a decrease of the infant mortality in the later periods.

1698. But as a fact, has not the increasing mortality in large towns been by various inquirers attributed to many other causes, and not to vaccination?—Certainly.

1699. Sir *Smith Child*.] I think you mentioned that you had called at the Royal College of Physicians within the last few days?—Yesterday.

1700. And you obtained their report?—Yes.

1701. And you quoted certain facts as detailed by them, did you not?—Certain statements made by them.

1702. And then you announced, I believe, that they had no authority for their statistics?—Precisely. There was no statistical basis for the figures which they gave.

1703. That is rather a strong assertion, is it not?—It is, certainly.

1704. What authority have you for it?—I have given my authority in evidence in detail.

1705. You quoted Dr. Wilson Fox; may I ask whether he is an opponent of vaccination?—I do not know. I have not the honour of his acquaintance.

1706. You quoted him as stating certain things with regard to vaccination, did you not?—I stated what he states in his public lectures, detailing his experiments.

1707. Is he, or is he not, an opponent of vaccination?—I do not know.

1708. Mr. *Muntz*.] Did I understand you correctly, when you stated that in second cases of small-pox, the mortality was from 10 to 11 per cent.?—Yes; I think that from the small data which we have, that is not an unfair estimate.

1709. Did you quote any authentic reference in support of that?—Yes; there is Dr. Bousquet's book in two places, Mr. Marson's table in the Blue Book, and Dr. Seaton's Handbook.

1710. You said that in some instances persons had small-pox three times; when a person takes a disease of that sort, like small-pox or measles, a second time, does it not prove that he is peculiarly susceptible to the disease?—Yes.

1711. Without being a medical man, you have probably noticed that people who had had measles or small-pox, may nurse children or sleep in the same bed with them without getting the disease?—Yes.

1712. Therefore there must be some peculiar susceptibility, must there not, if a person gets small-pox a second or third time?—One would suppose so.

1713. You mentioned also that you had known or read of instances of cow-pox and small-pox affecting persons at the same time; those were isolated cases, I presume?—I do not know exactly what the honourable Member means by isolated cases.

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1714. Are not such cases very rare, so that a case may have occurred once in 50 years?—I think not; the letter to which I referred, of Mr. Charteris', says that eight cases fell under his observation within a very short period.

1715. With regard to the increase of infant mortality; you know Dr. Lankester, the coroner for Middlesex, by name, no doubt?—Yes.

1716. Have you ever read his report, with regard to the increase of infanticide?—I have not.

1717. If that report showed a constant increase of infanticide, would it not affect, more or less, your remarks with regard to the infant mortality?—It would.

1718. You stated, did you not, that tubercular consumption was inoculated by means of vaccination?—Certainly, when the vaccination is effective.

1719. Have you ever turned your attention much to the question of tubercular consumption?—Not a very great deal.

1720. Are you aware that when children are born, they are more or less fitted for tubercular consumption, some being born with long necks and narrow chests?—I am aware that Dr. Sander-son in a recent lecture, rather sneered at the idea of there being any hereditary pre-disposition to consumption.

1721. Is it not a well known fact, to every father of a family, that in whole families there is consumption, and that in whole families there is total exemption from consumption?—Certainly, and there are also cases where consumption appears in some members of a family and not in others.

1722. Do you mean hereditary consumption?—No.

1723. You believe it comes of vaccination?—Certainly.

1724. It would be a very odd thing, would it not, if a family of 10 or 12 children all escaped it and another family all got it?—There may be difference of constitution, or vaccination may be more effective in one case than another.

1725. Has it ever come to your knowledge in the ordinary avocations of life, that when the members of a family were at the age of 16 or 17, they followed one another to the grave from consumption?—Yes.

1726. You presume they were all vaccinated?—No; I do not attribute every death from consumption to vaccination.

1727. I do not presume that you attribute every death from consumption to vaccination; but if a certain family at a certain age all follow one another to the grave, does it not show that there must be some hereditary pre-disposition to that disease?—I quite think so.

1728. Mr. *Taylor*.] I understood you to answer the question, as to whether vaccination has diminished the total deaths from small-pox, by (very properly) appealing to the statistics, and say no; by the returns and by the figures it has not done so?—Do you mean the prophylactic or mitigating power of vaccination?

1729. You were asked whether you believed that vaccination had had a beneficial effect upon the total mortality, and I say I think it has; you of course say the reverse, that it has not; then the friends of vaccination point to a certain number of years to show that there is a diminution of 2,260 in the number of small-pox deaths; you (very properly) retort upon them, that there is

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however an increase of other diseases of 7,240?—Precisely.

1730. Then in estimating the evil results (as you believe them) of vaccination, the difference surely would lie between the increase of deaths from other diseases and the diminution of deaths from small-pox, and you would deduct the one from the other, would you not?—No, certainly not.

1731. Supposing that in that term of years the deaths from other diseases had increased, as you say they had, by 7,240, and the deaths from small-pox instead of diminishing, had increased by 2,260, would you not then have added those two numbers together in order to discover what was the real increase of mortality?—Certainly not.

1732. How would you have dealt with them?—If there was an increase of deaths from all other causes of 7,240, and an increase of deaths from small-pox of 2,260, then on the general tables there would have been an increase of 9,500.

1733. Precisely; the evil effects, therefore, so far as they could be shown by the figures, would then have stood at 9,500; 7,240 from the increase of deaths from other diseases, and 2,260 from the increase of deaths from small-pox; thus you perceive you treat the figures in precisely the same way whether they are a *minus* or a *plus* quantity, and add the two together; but that must be a mistake?—If there is a diminution of small-pox mortality we have a right, all other circumstances apart, to expect that diminution to appear in the general table.

1734. In answering the question as to what effect vaccination has had upon mortality, you very properly referred to the figures which show what the mortality has been, and you find an increase of 7,240 upon diseases other than small-pox, do you not?—No; upon the whole.

1735. With regard to the multiplication by three, you think that the increase is based upon the vaccination of 50 per cent. of the population?—No, the increase is due to 25 per cent.

1736. But in the first case it was 50 per cent. of the population was it not?—No, we have no means of knowing, and should not have known if it had not been for the compulsory act, what the numerical effect of vaccination was upon the increase of mortality.

1737. Was it not your theory that whereas the proportion of vaccinations was taken before at 50 per cent. and afterwards at 75 per cent., therefore the increased mortality should be multiplied in that proportion, and therefore by three?—Yes.

1738. Should not the rule of three sum be thus; as 50 per cent. is to 9,500 (or whatever number you take) so is 75 per cent., which would give one-half more and not three times as much?—No, it is as 25 per cent. is to the increase 9,500, so is the total 75 per cent.

1739. Dr. *Brewer*.] I think that in the commencement of your evidence you quoted this passage from John Stuart Mill's *Essay upon Liberty*: "No state can be called free where a man has not a perfect control over his own health, bodily, mental, and spiritual; and the state cannot be free where the right of the parent is taken away to maintain his children also in that state of health;" is that a passage from John Stuart Mill's book?—No, not the whole of it.

1740. Is any of it from John Stuart Mill's book?—Certainly.

1741. Will you tell me where I am to stop in the quotation, "No state can be called free where a man has not a perfect control over his own health, bodily, mental, and spiritual?"—That is the end of the quotation.

1742. And you have taken that to support your objections to state interference on behalf of vaccination, have you?—Yes, certainly.

1743. Are you aware that this passage is near the one you have quoted in exact opposition to it: "The ends of Government are as comprehensive as those of the social union, and they consist of all the good and all the immunity from evil which the existence of Government can be made either directly or indirectly to bestow?"—Yes, I do not see anything contradictory in that.

1744. Then if the Government could ascertain that there was a prophylactic or a therapeutic means to prevent disease or to cure it, would they not be bound to give the country that immunity which they could afford?—Certainly not.

1745. You have quoted Mr. Marson in support of your theory. The first thing you began with was to prove that cow-pox had no definite effect in stopping small-pox, that people had cow-pox and small-pox at the same period, and you prove by that, or you think you do, that the small-pox is not prevented, is that so?—Certainly.

1746. How long is the incubative stage of cow-pox, and how long is the incubative stage of small-pox?—I remember reading in a lecture of Sir William Jenner's that the eruption of the small-pox almost invariably made its appearance three days after the infection.

1747. But we know better now than Sir William Jenner did. The cow-pox incubation, as we know perfectly well, is from 96 to 109 hours; the small-pox incubation is from 240 to 288 hours, is it not?—Of course, I do not dispute that.

1748. The fulness of the cow-pox is 192 hours; the fulness of small-pox is 480 hours, and from 192 hours to 216 hours the cow-pox declines; whereas it goes on to 552 hours in small-pox; if there were out upon the patient at the same time cow-pox and small-pox (which, of course, is quite possible), and if the incubative stage of cow-pox as compared with that of small-pox was as 96 hours to 240 hours, would it not be certain that the person must have had small-pox for a considerable period before being vaccinated?—If the honourable Member would kindly put that into days it would rather simplify it.

1749. From the fourth to the fifth day, as you know, the cow-pox begins to show itself; from the 10th to the 12th day, as a rule, small-pox begins to show itself, rarely before the ninth day, and most commonly not till the tenth day; it goes on then and takes its course in the number of hours I have stated; does that or does it not show that the small-pox was already in its incubative process previously to the vaccination for the cow-pox?—Yes.

1750. Then how can cow-pox be presumed to prevent what has already taken place, and is in an incubative condition?—That must depend upon the lapse of time during which you must consider that a person is undergoing vaccination.

1751. You have stated, have you not, that of cow-pox and small-pox together, 15 per cent. of mortality was observed?—That is what is shown by the cases collected by Dr. Ballard.

1752. Does

1752. Does not Mr. Marson specifically say that there is a protective vaccination and a non-protective or spurious vaccination?—I daresay he does, but I have not seen it; when he corresponded with me to enlighten me he never told me anything of the sort.

1753. As regards those who are properly or protectively vaccinated, according to Mr. Marson, the advantage of those who have four marks is that only one in 200 die; while of those who have but one faint mark eight in 100 die, and of those who have no mark specifically like the markings of a thimble upon the arm (which is very definite), 35 in 100 die; so that the proportion of protection in the case of those not marked at all as compared with those who are perfectly marked, is the proportion of 70 deaths to one; he then particularly shows you the character of vaccination; how you are to ascertain that character, and how you are to rely upon it; and his whole case is therefore protective vaccination; is not that so?—It does not show that at all, though Dr. Marson may have said so.

1754. You say that you have seen secondary syphilis produced by vaccination; would you be good enough to tell me what you saw?—I saw a child in a state of eruption; I heard the mother's account; I asked her what the doctor said about it; she said he said it was nothing, and I asked her if he gave her any medicine, and she said, "Yes, I have some of it by me," and she showed me a powder composed of cubebs and calomel.

1755. Allow me to ask you whether this is what you saw; swollen face, hurried and difficult breathing, bloated condition of the body, with eruption like aggravated measles, and an inflamed arm, because that is not the disease at all?—I saw a child in a beastly state of eruption.

1756. It has no more to do with vaccination than my sitting here has. The fact of the case, as everybody knows, is, that these are things which we have traced over and over again. Will you be surprised to hear that in this aggravated form, published as secondary syphilis, it turned out that the mother had eaten mussels for her supper (and we know perfectly well where those mussels were taken from), and that the child was never treated at all, but the mother was treated simply for *urticaria*, or common nettle rash?—That is not the case that I mentioned.

1757. With regard to the increase of zymotic disease, is it true that zymotic disease has increased since the introduction of vaccination?—I rather think it has not, on the whole.

1758. The increase of population within the same area, *per se*, would really have caused an increase of zymotic disease, would it not, unless prophylactic means had been used?—Certainly not.

1759. Then when large masses of people are moved from one district to another, and are crowded in that district, there is no increase of zymotic disease, according to you?—Not rateably.

1760. What are the diseases, then, that are imported there, or grow up in that case?—I do not see any occasion for any diseases.

1761. You object to the use of animals, or to the vaccine being taken from the cow, because it is the conveyance, as is supposed, of an animal's disease into the human body, is that your objection?—No; that is not my objection at all. My objection is to cutting the skin of a perfectly healthy human being, and putting any poison whatever into it.

1762. You call it poison?—Certainly.

1763. May I ask you if you have the same objection to the introduction of flies into the human skin?—Certainly; I do not want any flies under my skin.

1764. Do you think that Spanish flies have never been of the slightest service as a therapeutic means, and that life has never been saved by the use of Spanish flies?—I never heard of Spanish flies being put inside the skin.

1765. Have you never known of blisters being applied?—Blisters are applied outside the skin.

1766. So the whole action of the blister is outside the skin, is it?—The blister is applied outside the skin.

1767. How does it act?—I did not come prepared for a medical examination.

1768. You have stated that tubercular disease is produced by vaccination, why do you say that?—I say that because recent experiments have shown that the raising of the outer skin, and the infliction upon what is called by the scientific experimenter the adenoid tissue of any substance whatever which will cause a degree of irritation, does lay the foundation of tubercular disease, and it is found on *post mortem* examination in the different vital organs of the body.

1769. Has tubercular disease in any way increased since the introduction of vaccination?—I think it has not.

1770. What is the substance of the tubercle?—I do not know what the substance of the tubercle is; they call it a caseous deposit, whatever that may mean.

1771. When a child's ear is pierced with a common needle to put earrings in, have the same symptoms which have occurred and been noticed after vaccination occurred in that child, if that child is at all scrofulous, such as inflammation of the glands of the throat, or sometimes ulceration of the glands?—I do not have any of my children's ears pierced, so I do not know anything about it.

1772. Is it a fact?—I do not know.

1773. You have spoken of the case given by Dr. Ricord, of *la jeune fille de l'Hôpital de la Charité*; that case was believed to be an instance of syphilis produced by vaccination, was it not?—I think that was one of the cases to which Ricord referred in the first lecture; I think the case was in the Hôtel Dieu.

1774. Do you know what was supposed to be the condition of that young person when vaccinated, and that she was never examined previous to vaccination, but was supposed to be in health, and to have no disease whatever?—Very likely.

1775. Are you aware that after that debate it was tested, and she was found to be suffering from *une affection utérine*?—I do not know.

1776. Is that the case to which you have referred here?—Very likely; that is one of the cases which attracted Monsieur Ricord's attention particularly to the subject, but I do not think it was the case that made him recant his opinion.

1777. Have you ever seen or heard of the diseases of *variola* and *vaccinia*, the small-pox and the cow-pox, occurring at the same period in the same person, and in close proximity, and matter being taken from either and introduced into two arms, the result being that from the cow-pox perfect *vaccinia* is produced, and from the small-pox a perfect small-pox pustule?—I have never seen that, but if that is a fact it is a conclusive

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fact that the cow-pox can have no effect at all upon small-pox in the same person.

1778. It is a possible fact that they are modifications of the same disease, is it not?—And yet they produced unmodified results when inoculated.

1779. Mr. Alderman *Carter*.] I should like to ask you again, as I did not well understand your answer to my honourable friend, how much of what is stated in Question 1591 is a quotation from John Stuart Mill, and how much is your own?—As much as refers to the person is John Stuart Mill's.

1780. Ending with the word "spiritual"?—Yes; I quoted from memory.

1781. "No State can be called free where a man has not a perfect control over his own health, bodily, mental, and spiritual." That is John Stuart Mill?—Yes.

1782. What is added: "And the State cannot be free where the right of the parent is taken away to maintain his children also in that state of health," is yours?—Yes.

1783. In your opinion has a person, under all circumstances, a perfect right to judge for himself as to what is best for the health of himself and family, irrespective of any interference on the part of the State?—Yes, certainly.

1784. Then the State, in your judgment, has no right whatever to interfere to prevent the spread of disease if such interference would come across a power or authority in the parent?—But that would not be his own health; that would be the health of other people; if a man spread disease about he would be operating on other people.

1785. But, according to this quotation, I understand that a man is to be his own judge in all cases of what is best and what is right for the health of his child, and that the State has no right to interfere; is that your principle?—My idea is this, if you will allow me to illustrate it: I, living at No. 1, and having the responsible control over my family, object to No. 2 coming and knocking at my door, and ordering me to do anything in my house that I do not approve of; and I say he has no right to do it. Take all the numbers, and there is no right in any one of them, nor in all of them collectively, to do it; and if they are constituents of the State, and voters, and so on, they cannot confer rights which they have not themselves, upon their delegates; and therefore any interference of that kind is a violation of the first principles of representative government.

1786. Supposing that Parliament was thoroughly convinced that it was necessary to enact compulsory vaccination, and to carry it out strictly, you would say, according to the laws of society, that Parliament had no right to do it?—Certainly not; it would be a gross usurpation of power, and a violation of the first principles of representative government.

1787. Then supposing No. 1 was understood and recognised by the State as being the cause of spreading disease in the whole neighbourhood, would the State have no right to interfere?—I do not see exactly how the State could come to any conclusion of the sort.

1788. Take a case that I know very well in my own town. A gentleman, who is on a sanitary committee holds that it is more healthy to live in cellars than to live above ground; has the town a right to interfere with that view of his, and to drive the people out of cellars, if the

sanitary committee is generally of opinion that to live in those filthy cellars is not conducive to health?—I thought the honourable Member put it the other way, that the sanitary reformer thought it better to live in cellars.

1789. The sanitary medical inspector says it is unhealthy to live in cellars; but one of the occupants of the cellars, and one of the owners of the cellars says "It is more healthy to live in the cellar than it is to live above ground, and therefore I will not go out." Do you think the State has any right to turn him out?—Certainly not.

1790. Then supposing his living in that cellar should cause fever in that neighbourhood, do you think the State or the sanitary authorities of the town have any right to interfere?—That is all theory.

1791. It is not theory, I am giving you facts. I can take you to the cellar where the cholera began when the cholera was epidemic in Leeds, and whence it spread to the neighbourhood. I could take you to where fever began in a cellar and spread to the whole neighbourhood, and yet the owner of that cellar disputed the right of the lawful authorities to turn him out, because, in his opinion, it was more healthy to live in the cellar than out of it; do you think the State was right in forcing him out of it?—I do not know; if he had lived there many years, and enjoyed perfect health, he might reasonably think that it was healthy to live there.

1792. He did; and because the privy was next door, and the matter from that privy had oozed into his cellar, and it had never injured him, he thought he had a perfect right to live there for ever; do you think he had a perfect right to live there?—I think so; but that is apart from the question.

1793. I think not; you say that a man has a right to do as he likes, irrespective of his neighbours?—That is apart from this question. No person ever found that a perfectly healthy infant was a nuisance, or that it spread fever or anything else.

1794. But you were asked what were your objections to vaccination, and you said you had a political objection, every man having a perfect right to do as he chooses, irrespective of the effect of what he does upon his neighbours; and I understand you to hold that in reference to this matter a person has a perfect right to do what he chooses?—To maintain himself in health and not injure his neighbours. If you can prove injury to his neighbours, of course that alters all the case.

1795. Then I shall be perfectly justified, as one of the Members of this Committee, in voting for compulsory vaccination, if I am thoroughly convinced that compulsory vaccination is necessary for the public health; according to what you said last, is not that a fair and legitimate inference?—If you can prove, or if anybody else can prove, that a healthy unvaccinated child produces disease in anybody else, of course that will be a legitimate conclusion.

1796. But supposing I am satisfied with the facts that are produced to me that on the whole vaccination is a practice that ought to be enforced, shall I not on your theory be justified in helping to enforce it?—Certainly not.

1797. Mr. *Candlish*.] You stated, did you not, that

that the increase of infant mortality below five years of age was 7,240 per annum from 1854 to 1868 inclusive?—Yes.

1798. That is not a relative increase, but it is an absolute increase; and it has no reference to the increase of population; is that so?—That is calculated upon the death-rates, and is of course proportionate.

1799. Assuming (as you do, and as I do at present, for the sake of the results) that the whole of that increase has been caused by vaccination, is not that total increase the exact measure of the mischief it has done?—No, I think not; because, according to the tables, we have a specific disease carrying off fewer than before in the same period.

1800. If you debit vaccination with the increased deaths, will you not in fairness credit it with the lives its advocates allege it to have saved?—Yes, but then I deny the allegation.

1801. Have you any more reason to charge vaccination with the increased number of deaths than to withhold from it credit for the decrease in the number of deaths from small-pox?—No.

1802. Then in fairness you will give it credit for those lives which it is alleged to save?—If I were making up the account as for and against vaccination, of course it would be quite right to do as the honourable Member for the University of Edinburgh has suggested, and that is to deduct the gain from small-pox mortality from the increase to the general mortality.

1803. The inquiry before this Committee is whether vaccination, as compulsorily applied, has been an advantage or a disadvantage; is not the fair settlement of the question to be arrived at on the net results?—Yes, precisely.

1804. Will not that invalidate your procedure, when to the 7,240 increased deaths you add 2,260 lives saved from death by small-pox?—I do not think it will invalidate it, because here we can put our finger upon a certain number which ought to cause a decrease in the death-rate.

1805. But if vaccination has saved them from small-pox, would not that be so?—Of course, if vaccination kills 9,500 children, you may suppose if you like that if they had lived to five years of age, 2,000 of them would have died.

1806. But vaccination cannot have killed the 2,260 fewer who have not died by small-pox?—They have died, or else there would have been a decrease in the death-rate.

1807. The net increase of deaths is 7,240; that is, the measure of the increase of the deaths, is it not?—Certainly.

1808. Supposing that your theory is wrong, and that the deaths have not resulted from vaccination in any way whatever, you would not, I presume, in that case allege for a moment that the 2,260 should be in any way debited to vaccination?—To any cause whatever, no matter what.

1809. Supposing (putting it hypothetically) that those saved by vaccination were left a prey to and died of cholera, and supposing that the vaccination was not the cause of the cholera, you would not attribute their death to vaccination?—No. Of course I would attribute it to cholera; if you eliminate the cause altogether, of course, it cannot be attributed to it.

1810. On what grounds do you allege, as you do broadly, that vaccination has caused this increase of infant mortality?—I know that *imprimis* it is the infliction of disease upon a

healthy person, and I expect it to produce abnormal results.

1811. That is an inference?—No, it is not an inference.

1812. Have you any evidence of facts upon which to base that conclusion?—Yes, plenty; and I will mention one or two if you like. A woman at Bristol took her child to be vaccinated at the age of seven months, and it had been perfectly healthy from its birth. I had this from her own lips, and it was corroborated by her husband who was sitting by. The child was seized with the first fit that it had in its life a few hours afterwards, and the second a few hours later, and it died there and then.

1813. And from that you infer that vaccination increased the deaths by 9,500 a year?—Not from that single fact. If the Committee want facts, I think from my own neighbourhood I could produce hundreds of facts. There is a man now in Durham Gaol for not having his child vaccinated, his reason being that he has lost three children distinctly from the process.

1814. As he believes?—As he believes.

1815. His belief may or may not be well founded?—The children were poisoned, and they died.

1816. But that is altogether an assumption again, is it not?—They are both facts.

1817. Mr. Alderman *Carter*.] Do you know that those children were poisoned?—Yes, certainly; they were taken to the public poisoner and poisoned. If vaccination is not poisoning, it is nothing.

1818. Mr. *Candlish*.] If death results from this poisoning, and 80 per cent. of the population are so poisoned, it would follow that 80 per cent. should die from that poisoning, would it not?—No, it does not follow at all, because persons may take poison and recover from the effects of the poison.

1819. I think we now understand how you make out this 9,500; it is by adding to the gross increase in deaths, the number which vaccination is alleged to have saved?—Which the vaccinators allege to have been saved.

1820. These 9,500 deaths as you allege are upon an increase of 25 per cent. in the number of vaccinations, and your calculation is that if 25 per cent. gives 9,500, 75 per cent. gives three times that quantity?—Yes.

1821. You reckon that the previous 50 per cent. gave 19,000?—Yes.

1822. Then the limit of the destructive action of vaccination is not 9,500 a-year according to your opinion, but 28,500 a-year?—Yes, of the whole vaccinations.

1823. Have you any statistics further than this increase on the years from 1854, on which you base the previous hypothesis of destruction?—No.

1824. Do you get at the 50 per cent. by the results of the 25 per cent.?—No, I got at the 50 per cent. from statements made in the Blue Books as to the proportions of vaccinations to births, and the general neglect of vaccination, and how much it ought to be enforced, and all that sort of thing.

1825. Do you believe, that during the 15 years preceding 1854, 19,000 a-year were killed by vaccination?—Yes.

1826. Upon what do you base that conclusion?—Because I find when the practice is increased by one-third, there is a definite and palpable result.

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1827. Then

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1827. Then you get your antecedent fact from the subsequent fact?—Precisely; it was indistinguishable before.

1828. From only that?—Yes; and if the increase in the practice of vaccination had been gradual instead of sudden, it would still be indistinguishable.

1829. Do the statistics justify your assumption that 19,000 a-year were killed by vaccination before 1854?—I think so.

1830. Were the deaths, in the 15 years preceding 1854, 19,000 per annum in excess of what they were in the 15 years preceding that?—I have not gone into that, but I should imagine that they were not.

1831. In point of fact you have no other evidence than comes out of this rule-of-three sum?—No.

1832. Mr. Cave.] You stated that inoculation prevailed very generally in Sweden, I think?—Yes, it was introduced there in the year 1754, according to the history, and made compulsory there.

1833. What was the result of it upon the previous mortality from small-pox?—I do not know that there is any evidence to show exactly what it was. I think that in the tables they used to mix up the small-pox with the measles, and it is not possible to tell what the effect of inoculation was.

1834. Then you are ignorant altogether as to what the mortality from small-pox in Sweden was before inoculation?—I do not remember just now anything about it.

1835. It is a very important point; you tell us that there are three periods in Sweden, the small-pox period, the inoculation period, and the vaccination period?—I think that the right honourable Member must have misunderstood me; I merely referred to Sweden with respect to the sudden decrease of small-pox mortality on the introduction of vaccination.

1836. But you previously stated, did you not, that inoculation was made compulsory in Sweden on account of the mortality of small-pox?—No; it was on account of Dr. Schultz coming to London, and being persuaded by his medical friends here to recommend that system to his Government.

1837. But I presume that unless there had been a necessity no such recommendation would have been made?—I do not know anything about that.

1838. Is it likely that if there was no small-pox in the country, inoculation would have been recommended?—Very likely Dr. Schultz would have to make out a case, but I have never seen it.

1839. Does it not show that there must have been small-pox in the country for anyone to recommend inoculation?—Of course.

1840. But you have no knowledge at all as to what the state of mortality from small-pox was? It is not possible to tell; the tables given here commence with the year 1750, and small-pox and measles were confounded together up to the year 1773.

1841. When was inoculation introduced?—In 1754; the account given by Dr. James Moore is this: "In the year 1754 Dr. Schultz was deputed by the states of the kingdom to inquire into the English method of inoculating for the small-pox; this physician, after a considerable residence in London, presented to the Royal Commissioners of

Health an excellent account of that practice, which was immediately established by the authority of Government, and variolous inoculation became one of the most lucrative branches of professional practice."

1842. But that is not to the point; the question is what the mortality was before that; you say that measles are mixed up with small-pox, but measles is not a very fatal disease, and possibly you can from the two form some opinion as to what the mortality was?—I rather object to the statement that measles is not a fatal disease: Rhazes the first writer on small-pox, says that the small-pox is less to be dreaded than the measles.

1843. I see that it is quite impossible to form an opinion as to the mortality before inoculation; what I think you wished to infer was that everybody having been inoculated, and having taken the small-pox, it was not extraordinary that vaccination should find the mortality very low?—It is not exactly that; what I mean is that the introduction of vaccination, accompanied by the suppression of the practice of inoculation would necessarily produce a marked effect upon the small-pox mortality.

1844. Is that in consequence of everybody, up to a certain point, having had the small-pox?—Precisely; and secondary cases being exceedingly rare.

1845. Then you would consider that the mortality from small-pox under inoculation was very considerable?—Certainly; and necessarily so, I think.

1846. You find that in the two years immediately before vaccination was introduced there was a very considerable mortality under inoculation, by the table which you have quoted, do you not?—Yes, I believe there was.

1847. In the year immediately before that the mortality was very small indeed, was it not?—Yes; I take it that the operation of the practice of inoculation was this: that when the disease was not epidemic (and I believe that in some of these old pamphlets which I have here there are instances given) the practice of inoculation produced comparatively little effect; but when the epidemic influence, whatever it may have been, was present, then the introduction of the small-pox germ into the body immediately developed itself into a more or less virulent form, and caused a great many deaths. That is shown over and over again in these old controversial pamphlets.

1848. But when vaccination was introduced, unless it was useful in preventing small-pox, would you not expect to fall back to the mortality of the pre-inoculation period?—Yes; or pretty nearly so; all other things being similar.

1849. Taking a series of years, for instance?—Yes; for instance, if the general condition of the people were improved, and all the people were got out of the cellars, where zymotic diseases are fostered, I will not say generated.

1850. There is probably not much difference in the condition of the people of Sweden between 1800 and 1820?—No; but 1800 was not the pre-inoculation period.

1851. But vaccination came in in the year 1802, did it not?—Certainly.

1852. You would expect to fall back upon the mortality which existed before inoculation began?—Yes; supposing that epidemics existed, and supposing that the other circumstances were the same,

same, and so on; but I do not know that there is any theory respecting epidemic disease that is worth a rush.

1853. Is it not a fact that in Sweden the mortality under vaccination has been very much less than it was before inoculation was introduced?—I do not know that.

1854. You gave the 15 years from 1854 to 1869, and you stated that you considered that the mortality ought to have very much diminished in consequence of the Local Government Act of 1858, did you not?—Yes.

1855. Did you not know that the Local Government Act of 1858 was very little acted upon for many years?—I know what Mr. Rawlinson stated (and I suppose that he did so on authority), that an expenditure of not less than eight millions of public money had been made under that Act, exclusive of the metropolis.

1856. But did he state when that expenditure commenced?—He did not; but he stated that in consequence of that expenditure, the local death-rates had in some cases been very remarkably diminished.

1857. Do you not know that it has been stated upon authority quite lately, that the action under the Local Government Act has nothing like kept pace with the increase of population in this country?—I do not know that that has been stated; but I should think it is possible that that is the case. Still we have patent facts, that is to say, the evidence and certain reduction of local death-rates; and when those reductions are aggregated, there ought to be a reduction in the general death-rate.

1858. Surely not, unless the action under that Act had kept pace with the requirements of the population?—But if sundry local death-rates were reduced, that must operate to decrease the aggregate death-rate.

1859. Does not your argument only prove this; that if in one town the Local Government Act had been fully carried out, and the health of the town had very much improved, there was a decrease of mortality in that town?—Certainly not.

1860. Supposing the Local Government Act is not carried out throughout the country, but on the contrary the conditions of health are worse, and have been getting worse every year, would not that account for this increase of mortality?—I think not; and I do not believe that that is the fact, and I will mention why. When I come to analyze the tables, I find that the increase of the general death-rate is caused by the increase in the infant mortality, and that if the infant mortality had been proportionately the same as before, there would have been a decrease in the general death rate, and that the conditions of adult life are really improved.

1861. But would you not expect to find, in crowded centres of population and in unhealthy conditions, that infants would suffer more than the adult population?—Certainly.

1862. Would not that account for the increased death being attributable to the general conditions of the people?—I think not, because infant mortality has increased all over the country.

1863. You do not mean to say that it has increased in one village, and in another village, and in another village, throughout the country?—Yes, I do.

1864. What information have you upon that

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point?—That the whole condition of infant life is proportionately worse than it was.

1865. Do you mean that you have gone into the circumstances of every village, and found that from reference to each case, or that it is so in the aggregate?—That it is so in the aggregate; that is to say, I believe, as far as I have gone into the figures, that there is no reason for supposing that the infant population is worse off proportionately in the large towns than it was before.

1866. Do you mean that infant mortality has not increased in large towns?—Not proportionately increased.

1867. Where did you get that fact?—I say that I have gone into the figures.

1868. Can you state any particular town in which the infant mortality has not proportionately increased?—I should not like to commit myself to a statement of that kind without going to book.

1869. That statement is rather vague; it has been stated to the Sanitary Commission, of which I was a member, and never contradicted, that the conditions of health of the whole people taken in the aggregate, are, in consequence of over-crowding, and increased population, generally worse than they formerly were in the whole of England and Wales, is that so in your opinion?—That is not the case; deducting the infant death-rate from the general death-rate, as anybody may do, from the tables which I have given it will be seen that there is an improvement in the condition of adult life taking the country all through.

1870. Taking the country all through we are given to understand that legislation is absolutely necessary to enforce the supply of the essentials of health, such as pure air and pure water in most of the great centres of population; does not that militate against your statement that the conditions of life have improved?—I think that the demands of the sanitarians have rather enlarged of late years; that there is an improvement, but the improvement in those particulars is not up to their mark.

1871. What specific data have you to support that assertion?—I have these specific data to support that assertion, that no less than 8,000,000 *l.* have been spent under this Act, and that the local death-rates have been improved.

1872. But you have stated that the aggregate of the death-rate has increased?—Precisely; and that that is entirely due to the proportionate increase in infant mortality.

1873. And you have also stated that infants suffer more from those bad conditions of health than adults, have you not?—Certainly not; of course it is a known fact that children die at a greater rate than adults, but that is not comparative; that is an actual fact; if there were 60 per cent. of children in one town and 30 per cent. in another, I should expect the general death-rate of the town which had 30 per cent. of children, to be considerably less than the general death-rate of the town which had 60 per cent. of children.

1874. Your opinion seems to be this; that because in certain places money has been spent and the death-rate has been consequently lower in those places, therefore it has been so over the whole country?—No; but those diminutions, be they few or be they many, ought to have operated to decrease the general death-rate.

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1875. But

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1875. But that of course depends, does it not, upon what has been done in other parts of the country?—Yes.

1876. And when you are told that the conditions of health have deteriorated in the country generally, though they may not have done so in certain cases, then would you not expect that the mortality would have increased in proportion to the population?—Certainly, I should expect that, and most likely I should believe it if I had not the statistics to guide me to a different conclusion.

1877. What statistics are those?—The Registrar General's statistics which he gives in the death-rates.

1878. The Registrar General gives a certain death-rate in the country, from which you deduce inferences; but he does not tell you that the state of the country is so healthy that that death-rate ought not to be smaller; you cannot get from the Registrar General's figures the fact that if the appliances for health were what they ought to be, if the Local Government Act had been properly carried out, that death-rate would have been considerably smaller?—No, but in consequence of works performed under the Local Government Act we find that a decrease of the death-rate is effected.

1879. Mr. Alderman *Carter*.] But your figures show an increase, do they not?—Precisely.

1880. Then how can you argue for a decrease?—The local death-rate is a fact; it is established over and over again; for instance, the town of Salisbury has been mentioned, where the death-rate has been decreased one-third, I believe.

1881. Mr. *Cave*.] Do you think that that arises from an outlay under the Local Government Act?—Yes.

1882. But this outlay under the Local Government Act not having been carried out throughout the whole country as it has in Salisbury, would you not expect to find that that would have an unfavourable effect upon the death-rate?—No, that remains as it is, unless it be argued that an improvement in one place means a deterioration in another place.

1883. Is it not the fact that the whole country, on account of the increase of the population, was deteriorating in the appliances of health until the Local Government Act enabled certain things to be done?—No; there is no evidence on the statistics to show that.

1884. Then on what ground were those Acts passed?—Simply because the conditions of health were bad, and they thought that they could make them better, which was true.

1885. For what reason were those places bad?—They were bad because they were under bad sanitary conditions.

1886. Was it not on account of the increase of population and the over-crowding in towns and villages?—No, I think not; there are as bad places which are quite stationary as any which are increasing; in fact I should say that increasing towns are better off than those which do not increase.

1887. Is not over-crowding one of the reasons for the bad health of a place?—I can understand that, no doubt; but when you have all over the country larger houses built and better ventilation, and all the rest of it, the sanitary condition is improved.

1888. But have you that all over the country?—Yes, I think so.

1889. Have you not already stated that there

has been an exceptional expenditure on Salisbury, which immediately lowered the death-rate of that city?—Yes.

1890. Then, if other towns in the same state as Salisbury have not had that expenditure made upon them, would you not expect an increase in the death-rate in those places?—No.

1891. Mr. *Jacob Bright*.] I think I understood you to say, with regard to this question of mortality in those large towns, that the mortality was less in the adult population?—Yes, deducting the infant mortality.

1892. Is that a fact at which you have arrived from figures?—Yes; that there is an improvement for the whole country.

1893. Then you infer, if that be the case, that the sanitary conditions must be generally better, or the adult population could not in itself be in a better condition in that respect?—Yes.

1894. But as there is greater mortality amongst children, and it cannot be referred to any worse sanitary conditions, you attribute it to some special cause?—Certainly.

1895. That cause, rightly or wrongly, you consider vaccination?—Yes.

1896. You were asked by the honourable Member for the University of Edinburgh if you could produce a table instead of that which you have handed in, of the ages from 15 to 45, comparing the soldiers with the civil population; will you be able to do that shortly?—I will set to work on it as soon as I get home and get it done as soon as possible.

1897. With regard to the "statement respecting the small-pox mortality in London during seven weeks to the 4th March 1871," I notice that there are three columns "specified as vaccinated," "specified as not vaccinated," and "not specified." On the 21st January 105 were not specified, and then every week there is a smaller and smaller number not specified until you come to the 18th of February when there are only 22 not specified; can you tell me how it is that there were so many not specified to begin with, and how it is that that column has dwindled down to such small proportions?—I cannot give the honourable Member any information as to why the figure was large in that column, but a note which I have made to the table will explain why that column should have been considerably altered in February. The fact was that the Registrar General issued a circular to the district registrars requesting them to place under the word "certified" the word "vaccinated" or the words "not vaccinated," as the case might be, in order, as he said, that information might be obtained respecting the present epidemic, which could lead to measures being taken. The circular winds up in this way, "The Registrar General feels assured that you will willingly assist him in collecting such information upon this terrible epidemic as may lead to the adoption of further measures to arrest its progress, and to mitigate its severity in future." That circular was issued on the 28th of January, and in the subsequent week the alteration took place, on February 4th.

1898. Then it appears from this table that the more the cases are specified, the more vaccinated persons we find die, does it not?—Yes, it does.

1899. Have you made any statement in your evidence as to the proportion of persons in this country who are vaccinated to those who are not vaccinated, or have you anything to say on that subject?—Yes; I made a rough estimate for the purpose

purpose of my calculation according to the very unsatisfactory figures which are obtainable; my estimate is that certainly not more than 50 per cent. of the population was vaccinated up to 1854, and that subsequently to that date, that is for persons up to 15, on an average something like 75 per cent. were vaccinated.

1900. Do you think that there will be about 75 per cent. vaccinated?—Yes, of young people.

1901. It is your opinion evidently that some children are killed by being vaccinated, and that children generally are injured by it?—Yes.

1902. Is it the opinion of persons who take a different view from yours; that is to say who are in favour of vaccination, that there is some danger, though it may be small, to children from vaccination?—Certainly, I never heard anybody dispute it; they always speak about it as a risk to be incurred.

1903. You mean that medical men, for example, if they were vaccinating particular persons for whom they had a good deal of consideration, would be specially careful as to where they got the lymph from, and so on; is that the case?—Yes, it is the case generally; I have known an instance where the vaccination was put off for a year until the medical man could get what he considered to be satisfactory matter. Lack of satisfactory matter was not the sole cause of all the delay in the particular case referred to. The operation was once deferred on account of dentition.

1904. Do you know that medical man?—Yes.

1905. Then I understand from you that in your experience medical men consider it necessary to be very careful and cannot perform the operation in a haphazard fashion, taking lymph from any place?—Certainly not; at least it is contrary to their instructions if they do so.

1906. That in your opinion would imply that there is risk, and if there is not great care very considerable risk?—Certainly.

1907. Did you say that the figures of the Registrar General show that with the increase of years there is a decreased liability to small-pox among vaccinated persons?—Both among the vaccinated and unvaccinated.

1908. Do the figures of the Registrar General show that?—Yes.

1909. And you are sure of that?—Yes; at least that there are fewer deaths in the higher ages.

1910. Are there are fewer persons attacked?—I cannot know about that, because we have no record of cases.

1911. Do you mean to say, then, that the figures show that there would be fewer children of seven years of age dying of small-pox than children of three years of age?—I cannot say that there are any data for that.

1912. Have you any knowledge that there are fewer persons of 15 years of age dying of small-pox than of persons between the ages of 12 months and 15 years; is the age of 15 less mortal with regard to small-pox than any other age intervening between one and 15?—I should say so; but I should not like to commit myself to the statement without referring to the figures.

1913. Do you believe that it is so?—I believe so.

1914. Then, of course, you would be at a loss to understand this new theory (I believe it is a new theory), that the second vaccination should take place at puberty?—It is quite contrary to all the facts which we have.

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1915. If it be a fact that the old are less liable than the young, I suppose instead of being vaccinated at puberty you ought to be vaccinated at 12 months or two years old?—The Prussian Government has recommended re-vaccination at the age of two years.

1916. We have had a good deal said about Rieord; he is a celebrated Paris doctor, is he not?—Yes.

1917. Has he followed some special line, or is he a general practitioner?—He is known as a specialist in regard to the disease called syphilis.

1918. *Chairman.*] With respect to an answer which you gave to the honourable Member for Manchester, you stated that the deaths were fewer in the cases of persons attacked with small-pox at the middle or the higher age than they were in infancy; does that agree with the return from the small-pox hospital, including the years from 1836 to 1851, which shows that few patients under 10 years of age have been received with small-pox after vaccination; that after 10 years the number began to increase considerably; and that the largest number admitted was for the decennial period between the ages of 15 and 25; that it was rather large up to the age of 30; and that from 30 to 35 it was nearly the same as from 10 to 15?—That is a conclusive proof that hospital statistics are quite contrary to those obtainable from the general population. The Registrar General's figures of the ages of persons dying in the present epidemic in London show a decreasing liability to death from small-pox as age advances.

1919. But may not these figures be taken as a very fair criterion?—Certainly not; I object altogether to the application of the statistics of a hospital to the statistics of disease for the general population.

1920. You were speaking in reply to the honourable Member for Manchester, of the mortality of small-pox?—Yes, but not of hospital practice.

1921. *Mr. Jacob Bright.*] I may say that I was led to ask you that question from the fact that, I think, I have seen it stated in "The Times" newspaper, that the conclusion to be drawn from the Registrar General's figures was, that as people advance in age from one year and upwards their liability to death from small-pox decreases; do you consider that that is borne out by the general figures?—I think it is borne out by the general figures.

1922. But you have not gone particularly into that?—No.

1923. *Chairman.*] You stated, did you not, that the annual increase of mortality during the 15 years, from 1854 to 1868, was 9,500?—Yes, taking it in the way that I take it.

1924. You got that 9,500 in this way, did you not; you stated that the increase of general mortality was 7,240, and then you took the decrease of small-pox mortality as 2,260, and added these two amounts together?—Yes.

1925. You have 2,260 fewer deaths from small-pox, and because you have 2,260 fewer deaths from small-pox you have 2,260 deaths from other causes; have you any right, if you have 2,260 fewer deaths from one cause to add 2,260 deaths which merely replace the 2,260 deaths which have not occurred; is it not a mere displacement; so that instead of having 2,260 deaths from small-pox you have 2,260 deaths from other causes, and would not your plan be adding them twice

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twice over?—I think not, because here is a palpable cause of diminution, and if you diminish the total by that palpable cause, there will be so many remaining; but the substantive fact is, that you have 9,500 more than that diminished figure.

1926. Supposing that there was no decrease of mortality from small-pox, and that your general increase was 7,240, you would not add any number to the 7,240; then supposing that there is a decrease from small-pox of 2,260, that 2,260 of saving is replaced by 2,260 deaths from other causes, is it not?—Precisely.

1927. Have you any right to add the replacement of deaths from other causes to the number of deaths which are saved in the decrease from small-pox, and so take them twice over?—Yes; but the whole mortality is brought about by other causes.

1928. You have a general increase of mortality of 7,240 over what took place before, have you not?—Yes, over what took place before; but what took place before included 2,260 deaths from small-pox, which did not occur in the later period.

1929. But those 2,260 deaths from small-pox, in taking this into account, had been replaced by 2,260 deaths from other causes, had they not?—Yes; but it does not matter whether you deduct the 2,260 from the previous period or add them to the subsequent period; in either case the result is the same. The difference is what you want.

1930. Does not your plan show a larger in-

crease of mortality than you ought to show?—I think not.

1931. Are you not replacing the decrease of deaths from small-pox by adding a number of deaths to the number of deaths from other causes?—I think not.

1932. Supposing that your calculation is wrong, and that 7,240 is what must be taken as the net increase of general mortality, that of course would alter your other figures to the extent of the difference?—Yes.

1933. Dr. *Lyon Playfair*.] With regard to the tubercle, as neither of us is a medical man, I want to understand exactly what you mean; you stated that Dr. Wilson Fox and Dr. Sanderson had inoculated vaccine matter upon a surface; what was produced?—Tubercle.

1934. Was not the tubercle produced by the open festering sore?—I do not know.

1935. Do you mean to say, that by vaccination the tubercles were communicated to a vital organ, and that it was not by the open sore, but by the specific virus that the tuberculous disease was produced?—If I remember the circumstances rightly, Dr. Wilson Fox opened the animals, and found tubercles on, I think, seven vital organs.

1936. By vaccination simply?—After vaccination.

1937. Did you not understand that tubercle in those cases was produced by the open sores caused, and not specifically by the vaccine matter?—All I know is that he said it was produced by vaccination.

Tuesday, 21st March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. Hibbert.

Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

MR. JOHN TOMLINSON HIBBERT, IN THE CHAIR.

Mr. AARON EMERY, called in ; and Examined.

1938. *Chairman.*] Do you reside in London ?
—I do, at 66, Great Portland Street.

1939. You wish to give evidence about the loss of one of your children, do you not?—Yes.

1940. Do you in your own mind connect the death of your child in any way with vaccination?—Yes.

1941. Have you any evidence to give which in any manner can prove that the child's death was caused by vaccination?—Yes.

1942. What is that?—There was a coroner's inquest held; the child was eleven weeks old when vaccinated on the 31st of May 1869; it was vaccinated from a healthy-looking child by Dr. Allen, of Soho-square; he made four small wounds in the right arm, and they all rose to a head, and on the ninth day from the day of vaccination the arm that was pricked swelled to twice its natural size, and was very painful, and I immediately sent to the doctor.

1943. What doctor did you send for?—Dr. Allen, who vaccinated it, and he attended to the child till it died. It gradually got worse from day to day; the little fellow had no rest night nor day from the 9th of June to the 4th of July, when death put an end to his sufferings. The swelling went from his arm to the whole of his body and the legs; it first looked red and then red and green; it seemed as if his blood was completely poisoned.

1944. What are you reading from?—A letter which I wrote to the papers. It was refused by the daily papers, and I could not get it in, but I got it into a local paper.

1945. What did the doctor say was the cause of death?—Dr. Allen certified the cause of death to be erysipelas. I took that certificate back to his house and saw his assistant, and I told him that I was not satisfied with such a certificate as that; I said that the child was killed by vaccination. He took no notice of that, but he sent the certificate back again by post.

1946. What was your reason for thinking that death had resulted from vaccination?—I had not the least doubt of it from the symptoms which followed from the arm to the body, and its turning red and green. I also called in Dr. Harrison, who lives next door to me, and he said that there was no possible hope for the child from the first

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time that he saw it. He did not treat the child, because Dr. Allen and his assistant treated the child. He said that he could do no good, the blood was poisoned, and no doubt it was caused by the poison which was introduced into the system.

1947. Is Dr. Harrison a practising medical man?—He is a member of the Royal College of Surgeons.

1948. Is he practising?—Yes, he is in very good practice.

1949. Mr. *Candlish.*] Is he a homœopathic practitioner?—No, he is a regular practitioner.

1950. *Chairman.*] Had the child been healthy up to the time at which it was vaccinated?—Yes.

1951. After the death of the child was there a coroner's inquest held on the body of the child?—Yes.

1952. Will you state what took place?—Yes. The inquest resulted from one that was held a few days previously, at St. James's Vestry Hall, on another child who died from vaccination, who was vaccinated at Dr. Allen's surgery.

1953. Do you know that?—Yes, I was there; and in that case the verdict of the jury before Mr. Bedford was one of death from natural causes, Dr. Clark stating that the death was due to erysipelas consequent on vaccination; not from the vaccine matter, but from the punctures in the arm, the vaccine not taking effect.

1954. Were you present at that inquest?—Yes, that is what led to the inquest on my child. I was there at that time, and Dr. Lankester was there. He asked permission of the Coroner to cross-examine or question the woman that was there belonging to this child, and the way in which Dr. Lankester badgered this woman about (for so I must call it) I did not like, nor did the Coroner, who called him to order twice or three times, and said it was irrelevant to the matter, and that he could not go into it. The jury seemed to me to be more influenced by what Dr. Lankester said than by what Dr. Clark had said, who made the *post mortem* examination on this child; and whilst I was standing in the Vestry Hall, in Piccadilly, Dr. Clark and Dr. Lankester and two more gentlemen were talking together in the body of the hall, and I overheard one of them say to the other, "We did not

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want this inquest kept open," because the Coroner, Mr. Bedford, was for adjourning the case for more evidence; and one said to the other that they did not want the case kept open, because if it was kept open it got blown about; and that roused my suspicion that something was wrong, and I immediately went to Dr. Lankester and Mr. Bedford, and I wished to have an inquest on my little boy, although he had been buried some few days in the Highgate Cemetery. The Coroner sent his beadle to me, I think the next day, and he asked me the particulars about my witnesses and so forth, and I told him whom I should call, that I should go myself, and my wife and the nurse, and likewise Dr. Harrison, and after he left me he went to Dr. Harrison, and asked him the nature of the evidence which he was going to give.

1955. Will you confine yourself to what you know of your own knowledge?—He went to Dr. Lankester, and told him, and then he came back again to me to say that I could not have Dr. Harrison as a witness. Dr. Lankester, who was the coroner, would not allow it. There was only one doctor who would be allowed to give evidence, and that was the doctor who made the *post mortem* examination.

1956. Did he say that the expense was the reason of that?—Yes; I said, "I do not ask you to pay the doctor; I do not want you to pay my witnesses at all; whether it is one guinea or five guineas I will pay the gentleman, if he comes, but I want to make sure of his evidence, because it is very important." The inquest was held on 19th July 1869, at the Brookfield Tavern. Dr. Harrison went up with me in a cab, and when he got there, another doctor, Dr. Harding, who made the *post mortem* examination of my little boy, took Dr. Harrison on one side, and he asked him, at one side of the cemetery, about ten minutes before the coroner arrived, what he was to say on the inquest. "Well," he said, "you must speak the truth."

1957. Mr. Muntz.] Were you present when this took place?—Yes, I saw it; I did not hear him say it; Dr. Harrison told me so afterwards when he was coming home. This Dr. Massey Harding, of St. Pancras, is a public vaccinator, and I thought it very funny that he should ask him what he was to say, and he told him that he was to speak the truth; that, no doubt, the child's death was caused by vaccination, and the gentleman did. He gave his evidence very fairly and straightforwardly; I mean Dr. Massey Harding. I asked Dr. Lankester whether he had ever known a death from vaccination before; he said, "No, he had not; a German lady whom he had vaccinated very nearly lost her life through it, but he had had no deaths; and, by his permission, I asked Dr. Massey Harding the same.

1958. Chairman.] Did you ask that during the inquest publicly?—Yes, in the same room. Dr. Harding said that he had not had any deaths himself, but that his brother had had one, and also Dr. Ballard, of Islington, had had one. I asked him if those deaths were registered as deaths from vaccination; he said, "No, they were registered, he believed, as from erysipelas."

1959. Was Dr. Harrison called to give evidence at the inquest?—No, he was shut out.

1960. Did you produce him?—Yes; but there was rather a contest between me and Dr. Lankester, because Dr. Lankester wanted to

call my wife first, and I saw the way he dealt with this woman at St. James's Hall, and I protested against it; and I said I would give my evidence first, and then my wife could follow and corroborate my testimony, and then he could call the other witnesses that I produced besides myself. I and my wife and Dr. Harding were examined. Then he said, "Gentlemen of the jury, I suppose you have enough evidence in this matter to arrive at a conclusion?" They said, "Yes, they thought they had;" and they consulted, and they returned a verdict of "Died from erysipelas caused by vaccination."

1961. Who gave evidence?—I and my wife, and Dr. Massey Harding.

1962. And no one else?—No; the other three witnesses, the nurse and my wife's sister, and Dr. Harrison were kept out.

1963. What was the verdict?—The verdict was that the child "died from erysipelas caused by vaccination." After that was given in, Dr. Lankester said: "Gentlemen, you must modify this verdict, and put 'misadventure,' or 'by accident' to it; and the foreman of the jury said he should do nothing of the kind, they had returned a verdict and they had done with it. I told Mr. Lewis, my attorney, that I should like to see that the proper verdict was recorded, and he got up and read the verdict, as recorded by Dr. Lankester, "Died from erysipelas caused by vaccination;" that ended it thus far.

1964. That ended the inquest that day, you mean?—At the inquest that ended it, but afterwards I got at issue with the Highgate Cemetery Company respecting the inscription which should be placed on the tombstone of my child, and I obtained permission to put on the verdict of the jury, which was "Died from erysipelas caused by vaccination." A dispute then arose as to which was the proper verdict, the verdict returned by the jury, or the verdict recorded by the coroner.

1965. Mr. Candlish.] Did I not understand you to say that your solicitor saw the jury's verdict entered?—He read it out distinctly to the court.

1966. Mr. Muntz.] What was the verdict of the jury?—"Died from erysipelas caused by vaccination."

1967. What was the coroner's verdict?—This is a letter which I wrote to Dr. Lankester: "Sir,—I having been at issue with the Highgate Cemetery Company respecting the inscription to be placed on the tombstone of my child, William Emery, as to cause of death; I have obtained permission to put on the verdict of the jury, which was, 'Died from erysipelas caused by vaccination.' A dispute then arose as to which was the proper verdict, the verdict returned by the jury or the verdict recorded by you. Now, Sir, I have got from the Clerkenwell Session House through you, at a charge of half a guinea, a copy of the verdict as returned by you, which is as follows: 'William Emery was found dying, and did die, of the mortal effects of erysipelas, coming on after vaccination, and the said jurors further say that the said death arose from misadventure.' Will you, Sir, be kind enough to explain the discrepancy, or why the correct verdict was not recorded? I am, Sir, yours obediently, Aaron Emery." Here is a letter which Dr. Lankester has written, or caused to be written to me: "Sir,—I am directed by Dr. Lankester to tell you that the verdict you got from the Sessions

Sessions House through him is the one returned by the jurors on the body of your son, William Emery.—I am, Sir, &c., *W. Schroder*.” I communicated with the foreman of the jury after that, and I wrote to him, and they have certified, in this way, a copy of the verdict recorded by Dr. Lankester: “We, the undersigned jurymen, beg to say the verdict returned by us was, that the said William Emery died from erysipelas caused by vaccination.”

1968. *Chairman*.] Is that signed by all the jury?—There are eight names; we could not find the others. There are the names and addresses of those who have signed.

1969. Does that include the signature of the foreman?—Yes; there is a discrepancy in the verdict. The certificate which I obtained from Somerset House is “Erysipelas produced by vaccination; misadventure; *post-mortem*.”

1970. Is that the return made to the Registrar General?—Yes.

1971. By whom would that be returned to the Registrar General?—This would be returned, I presume, by Dr. Lankester to the District Registrar, and thence to Somerset House.

1972. Mr. *Candlish*.] It varies in its terms from both the other verdicts?—It does. There is this word “misadventure,” which the jury protested against.

1973. *Chairman*.] At the time of your child's death were you a member of the Anti-vaccination League?—No, I knew nothing of it; I was not aware that there was anything like it in existence, and I did not know anything of the evils of vaccination at all.

1974. Was your attention called to it by what you heard on the inquest on the child?—By what I saw of my child, and likewise of the child that the inquest was held upon; I had no further suspicion upon vaccination than its making the arm of the child sore; and I do not like much to have the child ill for the next two or three weeks and crying at night.

1975. Have you any other children?—Yes; three.

1976. Were they older than the child who was vaccinated?—Yes, two of them.

1977. Did they suffer in any way?—No bad symptoms followed; they were well in a week or two; a sore arm, but nothing else. The last one, which is eight months old, I have not had vaccinated.

1978. You wish to state to the Committee, I presume, that you think that vaccination was the direct cause of the death of your child?—I have no doubt of it at all.

1979. Do you mean to say that vaccination is bad in itself, or that it is bad if it is badly performed, or if bad lymph is used?—It is bad in the whole system. I have taken a great deal of trouble, and I have gone into the facts from different parents, and have spent a deal of time and money to ascertain what it really is doing; and I am satisfied in my own mind that there was never a greater mistake in this world than vaccination. I have seen at least from 100 to 150 children suffering immediately after vaccination, and I have seen parents who have told me that about that time they have lost children from vaccination. One was a public-house keeper, where Notting Hill old gate used to stand; that publican told me there that he had lost a child, and would never have another done.

1980. Have you anything else which you wish

to say to the Committee?—There are four cases which I have seen lately in Cleveland-street suffering after vaccination.

1981. Dr. *Lyon Playfair*.] At the present moment?—Within the last week or two.

1982. *Chairman*.] Was that immediately after vaccination?—Yes.

1983. In what way are they suffering?—They have nasty ulcerous sores over their faces.

1984. Can you give us the specific names of those cases that are at this present moment suffering?—I forget the names. I dotted down upon a piece of paper their names, but I lost the paper; but I know the houses and I can ascertain. One case is in St. Ann's-court.

1985. Mr. *Candlish*.] Could you take any medical witness sent by this Committee to see the cases?—Yes, I know where the houses are. I can ascertain the names and addresses. Some of them are getting better now; that is two or three weeks ago. I have been several times round to the vaccination station in Whitfield-street within the last few weeks, and I have seen what a state the poor children are in when they are brought back the week following after vaccination, the arms being inflamed from the elbow-joint to the shoulder, and they screaming as if they would scream their eyes out, and the mothers crying; and I have asked them whether they believed in vaccination.

1986. *Chairman*.] You, of course, do not mean to say that vaccination can be performed without causing some inflammation?—I think it very cruel; I do not think that I should be allowed to serve a dog like it.

1987. Supposing that you had a child attacked with small-pox, and the child died, although you believed in the protective power of vaccination, might you not believe that that was equally cruel?—There is no proof that the child would have small-pox; that is imagination, or rather hypothesis.

1988. You say that it is cruel to have children vaccinated when it causes inflammation, but you do not consider that other people may think it cruel not to have them vaccinated?—No, because even after vaccination there are about 90 per cent. get small-pox.

1989. You merely stated as your own opinion that you think it cruel to have children vaccinated?—I think there is no doubt of it.

1990. Is there anything else which you wish to state?—I have seen three deaths immediately after vaccination, one at Shadwell, my own child's, and this one at St. James' Vestry Hall; I think that case lived at 69, Berwick-street. These were all done from perfectly healthy children; the doctors examined all those children, and approved of them as being perfectly sound and healthy children from whom the matter was taken, and inserted into my child; that proved to my mind that vaccination was wrong in itself; there was no syphilis taint in it, but only blood poisoning. I am a member of the board of vestry of St. Marylebone, and I find that our medical officer states that out of 110 cases of small-pox 92 persons per cent. have been vaccinated since the commencement of this year in the month of January.

1991. Mr. *Candlish*.] That is to say, about 101 cases have been vaccinated?—Yes, that would be so. For the month of February the total deaths in the parish from this disease, including those which occurred in the temporary hospitals,

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were 12; of those, six were unvaccinated cases, three were vaccinated, and of the remaining three no information could be obtained.

1992. What are you?—I am a provision dealer, wholesale and retail.

1993. Dr. Allen vaccinated your child, did he not?—Yes, and he attended my wife at the birth of the child.

1994. Did he attend it in its illness?—Yes.

1995. Had you ever any conversation with him as to the cause of the child's condition?—No, I was out a good deal, riding about in my trap, and so forth, and I did not see him when he came.

1996. That the illness was the result of vaccination occurred to you afterwards, did it?—No, at the time.

1997. You called in another medical man, Dr. Harrison, I think?—Yes.

1998. Had he any consultation with Dr. Allen?—No, not that I am aware of; I do not believe he had.

1999. If you were satisfied that the child's illness resulted from vaccination (and I understood you to say that Dr. Harrison confirmed you in that view), how did you happen to continue Dr. Allen's professional services?—I could not do otherwise that I could see, because Dr. Harrison told me that he could not do any good; I called him in specially to see if he could do anything for the child.

2000. Did Dr. Allen concur in your view that that illness was caused by vaccination?—No; he said at the inquest that he attributed the death of the child to some fault of the child, but he could not explain what that fault was. The child was perfectly healthy, and it was the finest of four born, and as jolly and as hardy as a child could possibly be.

2001. How did it happen that Dr. Lankester was present at the inquest before Mr. Bedford, the coroner?—He had no business there, as far as I could see, because he was not interested in the case at all, and knew nothing of it; he merely went there to examine this woman, as far as I could make out.

2002. He himself, as a coroner, attended an inquest before another coroner and cross-examined the witnesses?—Yes, by permission of the coroner.

2003. You mentioned Dr. Clark; was he a witness in that first case?—Yes; he made the *post-mortem* examination on that child.

2004. Have you a record of his report of that *post-mortem* examination?—That is reported in the paper.

2005. What was Dr. Clark's report?—I will read what he said; I was there, so that I know it is correct: "Dr. Clark stated that the death was due to erysipelas consequent on vaccination, not from the vaccination matter, but from the puncture in the arm, the vaccine not taking effect"; that was his principal evidence.

2006. Is Dr. Clark a public vaccinator?—I do not know.

2007. Was Dr. Harding at that inquest?—No, he was employed by Dr. Lankester afterwards to make the *post-mortem* examination on my little boy; he is the public vaccinator at St. Pancras.

2008. Did you wish for a *post-mortem* examination of your child?—I did not say so; I merely wanted the body exhumed and an inquest held.

2009. Did you acquiesce in Dr. Harding's

making the *post-mortem* examination?—I did not know who was the man till the inquest.

2010. What was Dr. Harding's report on the *post-mortem* examination of your own child?—"Mr. Thomas Massey Harding, F.R.C.S., said he had been a public vaccinator for more than 12 years. He had made a *post-mortem* examination of the deceased, and found, notwithstanding its illness, that it was a very fine well-nourished child. On the right arm there were four marks, the result of vaccination. He cut into the tissues of the arm, neck, and back, and he found fluid deposited there. All the abdominal viscera were healthy. The immediate cause of death was exhaustion from erysipelas, produced, he thought, by the vaccination."

2011. You were present and heard that?—Yes, that is correct.

2012. You spoke of a good deal of aversion to vaccination throughout the districts in which you move, did you not?—Yes.

2013. What is its extent?—I can hardly say correctly, but there is a great aversion to it, wherever I have been, amongst some people; some people believe in it.

2014. Do you not apprehend that aversion to be somewhat an expression of sympathy with you, coming out in consequence of your own views?—No, not my case only, I think, but other cases which have been reported in the papers from time to time.

2015. What is the class of people of whom you speak as being hostile to vaccination?—They are all classes, well-to-do and middle-class men, working-class men, and the very poor.

2016. Are they resisting the law now?—Oh, yes; those that can, shift from St. Pancras into Marylebone, and then from Marylebone to somewhere else.

2017. Do you think that the law would operate as a hardship if exemption from liability to vaccination followed the payment of a small penalty?—It would now, as the poor people are, if I understand the question, because the poor people are so short of money that 5 s. would be a punishment to them, and they could not pay it, and they go now and get their children vaccinated because they cannot pay the fine, although they have lost children from it; I have heard them say so.

2018. Would not anyone with a strong conviction that vaccination was an evil rather pay a fine than be vaccinated or have his children vaccinated?—They have gone to prison some of them rather than have their children vaccinated.

2019. Then if the penalty were imposed in that way the evils resulting from vaccination would not fall upon those who object to it, because the payment of the fine would exempt them from the obligation to have their children vaccinated, would not that be so?—Then they would pay the fine of course; I have heard them say that if the fine was 5 s. or 10 s. they would pay, but many of them cannot afford the 1 l.

2020. Mr. Cave.] I think that you stated that your child was vaccinated from the arm of another child?—Yes.

2021. Did you know that child from whom the matter was taken?—No, I did not myself; my wife saw the child and it looked a perfectly healthy child.

2022. Do you know what has become of it since?—No; Dr. Harding said at the inquest that the child

child from whom mine was vaccinated was a perfectly healthy child.

2023. How long was that afterwards?—That was about a fortnight or three weeks afterwards.

2024. And you have had no account of it since?—No.

2025. Mr. *Candlish*.] Have you been summoned for refusing to have your children vaccinated?—No.

2026. What course would you pursue if the law were put into force against you?—I hardly know; I have not made up my mind; no doubt I should pay the fine; I should never submit to vaccination.

2027. Mr. *Taylor*.] You know something of two cases besides that of your own child, you say?—Yes.

2028. In the first one which took place there was an inquest, I think, you said?—Yes, that was at the St. James's Vestry-hall.

2029. What was the verdict in that case?—Death from natural causes.

2030. Was there any inquest upon the third child?—Yes.

2031. What was the verdict upon that inquest?—“That on the 2nd day of November 1870, the said Rose Addison was found dying, and did suddenly die, of the mortal effects of piæmia, and the said jurors do further say that her said death arose from natural causes.”

2032. Was there a *post mortem* examination in this case?—Yes.

2033. Do you know what was the report of the examining surgeon?—I almost forget. He said he found pus here and pus there, and the matter was all mixed with the blood in the heart and different organs of the body; and the jury returned a verdict in accordance with the medical man's evidence.

2034. Mr. *Muntz*.] You say that the first child died from erysipelas; but the vaccination did not take, did it?—So he stated.

2035. Then death came from the puncture, I presume, and not from the vaccination?—According to Dr. Clark's evidence.

2036. That was the first child, was it not?—Yes.

2037. Do you know what age that child was?—Five months.

2038. With regard to your own child which you had the misfortune to lose, what age was it?—It was about four months old.

2039. Did the vaccination take effect then?—Yes, in four places.

2040. Then the evidence which we have is that three children died after they had been vaccinated?—Yes.

2041. But in what way do you connect that with vaccination?—In the way that I have stated. I do not think that I can put it before the Committee any plainer. The arm, a few days after it had been vaccinated, began swelling and continued to swell.

2042. Did the first child's arm swell?—Yes, I went and saw the child when it was dying.

2043. But I understood that the vaccination did not take in the first child?—No, it did not; so Dr. Clark stated.

2044. It was merely the statement of the surgeon to that effect?—Yes.

2045. You are not a judge yourself whether it took or not, I suppose?—No, I did not examine the arm.

2046. You have stated that there is a strong

aversion to vaccination in your neighbourhood, have you not?—Yes.

2047. Are there not a great number of public papers and prints disseminated, showing the deaths alleged to arise from vaccination?—Yes, plenty.

2048. Is it not natural that people who read those papers should believe that their children die of vaccination, when they do die?—No, I do not think that they would be so stupid as that.

2049. You are aware that children are very liable to die at an early age from teething, I presume?—They do, over and over again.

2050. And very healthy children will die from teething in a very few hours, will they not?—Yes; but you cannot connect that with vaccination, I think.

2051. Supposing that a child was vaccinated, and died a fortnight or three weeks afterwards from teething, and the parent had been told over and over again that children often died from vaccination, would he not be very liable to believe it?—I do not think he would.

2052. Have you not an aversion to it yourself?—Yes, but I am not prejudiced, do not run blindfold into things; I take things fairly, and judge them by their merits. I should not be led away because I had lost one child even.

2053. But the account which you gave us of the effect on the third child seemed as if you had been rather led away by your own prejudices?—Every word which I have stated was the word of the surgeon who made the *post mortem* examination.

2054. But they were not the words of the verdict of the coroner's jury?—No, I cannot help that; that was the word that he said at the inquest.

2055. You have just made the remark that you considered that vaccination was very cruel; if the cruelty of a slight puncture, and the feverishness which is the natural result, and which you cannot be surprised at, is to operate for the whole of life, and may tend to prevent small-pox, would it not be worth trying?—If you or I, or any person has on his finger a fester, or a little boil (such as I have seen children with, three or four of on each arm), it will cause him to lie awake for nights; and what must be three or four of those sores on the arms of poor little children three months old? I say it is cruel.

2056. But supposing that those punctures or boils prevent a terrible disease in future life, is it cruel to prevent that disease by this little trouble for a few days?—I think that it is, because there is a great risk attached to it; and another thing is that you are not sure that that child will have the small-pox. If it was a certainty that every one would have small-pox, and that vaccination would decidedly stamp it out as they say, then perhaps it might be worth while, but then I do not consider that it ought to be compulsory.

2057. Is it not something in the light of a life insurance?—I think not.

2058. You pay a certain sum for which you may never get anything, but you pay it in case of a difficulty arising?—Yes, but you do not inflict a disease. What we understand by vaccination is that this matter is taken from the horse, given to the cow, and that from the cow it is put into the arm, and that it goes from arm to arm for 30 years, through the whole human species, and all manner of dirt is scraped out of one person's arm and put into another's.

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2059. That is your theory; but are you aware that medical men do not agree with you?—They ought to do so; it is a fact.

2060. Supposing that the matter could be taken from the cow, or through the medium of a heifer from the cow, that would meet so far the difficulty to which you have just alluded, would it not?—Where would the heifer get the disease from?

2061. You would not get the disease from the other children, because no child would ever get between the cow and the patient?—They would not get syphilis or any other constitutional disease then.

2062. You stated, did you not, that 92 per cent. of the persons who had small-pox at one of the hospitals, were vaccinated?—That was the report of the medical officer of St. Marylebone, Dr. Whitmore.

2063. Might not those parties have caught the disease before they were vaccinated?—I could not tell; I should not think they did.

2064. Sir *Smith Child.*] Did Dr. Allen vaccinate your two previous children?—No, he did not; I almost forget who vaccinated the other two, but I think it was not Dr. Allen.

2065. Mr. *Muntz.*] Are you aware that for a great many years almost all of what you may call the wealthier classes in England have had their children vaccinated?—I do not think they have.

2066. Do you know any person of what you may call any standing in society who has not had his children vaccinated?—Yes; Mr. Thomas Chambers, the Member for Marylebone, I believe has children, and he has not had them vaccinated.

2067. Then you think that those who have vaccinated their children have been very cruel?—I think so, under a mistaken idea.

2068. Do you think that the great majority of the educated classes have during the last 40 or 50 years been labouring under a great mistake, and have been guilty of cruelty?—I think so, with the assumption that vaccination would prevent small-pox, and yet when small-pox comes it knocks them over just the same.

2069. Mr. *Holt.*] I understood you to say, that in the case of one of the children who died, upon which a coroner's inquest was held, the medical officer said that the cause of death was consequent on vaccination; was I right in that?—Yes.

2070. Dr. *Lyon Playfair.*] I think you said that you were satisfied that the lymph with which your child was vaccinated was perfectly healthy lymph?—That is to say, that I do not think that there was any taint of syphilis.

2071. It was taken from a perfectly healthy child?—Yes.

2072. And your own child was perfectly healthy?—Yes.

2073. And still that lymph poisoned your child, and it died?—Yes.

2074. Does it not strike you that there is something very peculiar in the case. Is it the case that perfectly healthy lymph with perfectly healthy children usually produces death?—I do not say that it is a general rule, but it will do so sometimes.

2075. Is it not an extremely rare exception to have cases of perfectly healthy children vaccinated with perfectly healthy lymph dying?—I cannot say to what extent it happens.

2076. Would you not consider that your child's case was a very peculiar one?—I hardly know.

2077. Are you aware that erysipelas has sometimes followed the scratch of a pin?—I have. I have heard Dr. Lankester talk of that over and over again.

2078. And various accidents, such as putting ear-rings in, and other things may have that effect, may they not?—I do not believe that that is done by the prick of a pin, when it does follow, but it is what is left in from the pin. It is a corrosion or something which is left under the skin, and being absorbed into the system the blood takes it up, and they die of piæmia, or whatever they call it.

2079. Then you think, for instance, that the prick of a pin will introduce a blood poison just as bad as vaccine matter?—If it is corroded, or there is any dirt upon it or canker, or an old nail will do it, no doubt.

2080. And the erysipelas arising in such a case would be exactly parallel to the erysipelas which arose in the case of your child after vaccination, you think?—I do not know whether it would; I am not medical man enough for that.

2081. You stated, a short time ago, that Mr. Thomas Chambers had not had his children vaccinated; do you state that of your own knowledge to be true, or merely from hearsay?—I have had some conversation with Mr. Chambers at different times, and he told me that he had a boy down at Birkenhead. They wrote to Mr. Chambers to ask him if he would have his child vaccinated, and he wrote back and told them no.

2082. Dr. *Lyon Playfair.*] Was that vaccination or re-vaccination?—Vaccination; he said that he would not have his boy's blood poisoned by vaccination, and that he would rather let him live and chance having small-pox.

2083. Mr. *Candlish.*] Do you know Mr. Jacob Bright, a Member of this Committee?—No, I never spoke to him in my life.

2084. You do not know that he does not have his children vaccinated?—No, I do not.

2085. You have been asked whether it is not likely that in a great many cases of death after vaccination the cause of death may be teething; did you ever know (or did you ever know anybody who ever knew) teething produce swellings of the arm or discolouration of the skin all over the body?—No, I never knew a case in my life like it.

2086. The case you speak of is one where the arm was greatly swollen, is it not?—It turned red and green, and went down the body to both legs, and the child died, as it were, an inch at a time, as if the blood was being poisoned, as I thought.

2087. You never heard of a case of simple teething producing results like these?—Never.

2088. You have known of one healthy child vaccinated from lymph taken from another healthy child, who died, as you believe, from vaccination?—Yes; my own, and so was the other two.

2089. Are you sure that your own child was a perfectly healthy child, and that the child from whom it was vaccinated was also healthy?—Perfectly; as healthy as children ever were in the world.

2090. Mr. *Muntz.*] You said that you had never known a child who had died from teething have marks on the body or the arm at all?—No.

2091. Did you ever see a child die of convulsions?—No, I never did.

2092. You

2092. You know that they do die of convulsions frequently from teething, do you not?—Yes; my last child but one, a little boy, two and a half years old, has been very nearly choked in teething, with a sort of croup or convulsions; that is after vaccination, but, of course, I do not put that down to vaccination.

Mr. FREDERICK COVINGTON called in; and Examined.

2094. *Chairman.*] You live at Northampton, do you not?—Yes.

2095. Can you state to the Committee what the feeling is at Northampton with respect to vaccination?—There is a great deal of opposition to it.

2096. Does that feeling exist on the part of any particular class of people there?—No, I believe it has reference to all classes; indeed I know it has.

2097. Are you the secretary of the Anti-Vaccination League in that district?—Yes.

2098. On what grounds do the people of that district who object to vaccination object to it?—They object to it because it is made compulsory; they object to it, likewise, because they know the evil effects which have followed from it.

2099. Can you state from your own knowledge any cases where evil or fatal effects have resulted from vaccination?—Yes.

2100. Will you proceed to state them?—Mr. Wiggins, of Bradshaw-street, Northampton, had a daughter vaccinated when 12 months old; she was quite well at the time of vaccination, but five days afterwards syphilitic appearances presented themselves.

2101. Before you go farther in this case, let me ask you whether you speak from your own knowledge?—I know the parents well.

2102. Do you state what you state with respect to syphilitic appearances coming out after vaccination merely from what the parents said to you, or from your own knowledge of it, you having seen the child?—I have not seen the child; it is the report of the parents, which I accept.

2103. Have you any cases which have come within your own knowledge?—Yes; I have my own child; my eldest daughter, Annie Covington, was vaccinated when quite a child, and was the healthiest of the family. Immediately following vaccination she fell ill, and continued so for several months. On recovering, abscesses broke out in three places, all surrounding the punctures on the left arm, and one likewise on the left side of the bowels.

2104. Had you a doctor attending her?—Yes, Mr. Flewitt.

2105. What did he state was the cause of the abscesses?—I did not have him in reference to the abscesses.

2106. What did he say with regard to her ill health?—I did not ask his opinion about it.

2107. Did he attend her at all after vaccination?—Yes.

2108. What for?—For the illness which was consequent upon it.

2109. Did he give any opinion as to the cause of her sickness?—At the time I had no idea that it was consequent from vaccination, and therefore I did not ask his opinion about it.

2110. Do you not know at all what he treated her for?—I do not.

2111. Do you remember when the child was vaccinated?—About 11 years ago.

0.37.

2093. But supposing that the child had not been vaccinated at all, and died of convulsions in teething, which is a very common thing, are you aware that the body is often very seriously marked at the last moment, being blue and all sorts of colours?—I do not know that.

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2112. How soon after the vaccination did she fall ill?—Directly after.

2113. You say she was the healthiest of your children; had she been perfectly healthy up to that time?—Yes.

2114. How is it that you now say that you consider that her illness was caused by vaccination?—I have reflected upon the case, and seeing that the abscesses broke out all round the arm which was punctured, and that the abscess on the bowels was on the same side, and that it was immediately consequent upon the vaccination, I have been led to decide that that was the cause.

2115. Of course, that is the opinion which you have yourself formed?—Yes, that is my own opinion.

2116. But you have nothing to say with respect to the opinion of the medical men who attended your child?—No, I have not asked any medical man's opinion.

2117. Did you know anything about the child from which the lymph was taken to vaccinate your child?—Yes, she was a child belonging to the next door neighbour, and we thought her a perfectly healthy child.

2118. Has that child been a healthy child?—I know nothing to the contrary.

2119. Is your child still alive?—Yes, she is quite well at the present time.

2120. How long was your child ill?—For some time, about nine months I believe it was.

2121. Is there any other case of which you can speak as being within your own knowledge?—I have several fatal cases, and I have others not fatal; I cannot indeed speak to any that I have personally attended, because I am not a medical man, but all these cases I have had direct from the parents, and some of them are personal friends of mine. Mr. Cosford, of Copenow Mills, Cogenhoe, Northampton, had a healthy child of four months, when it was vaccinated in the year 1863; it began immediately to droop, sores broke out all over the body, the ears and eyes were much affected, and it died in the 10th month, the certificate being that it died from convulsions.

2122. That, of course, is the account given to you by the parents?—Yes; the parents believe that the death resulted from vaccination.

2123. Do you know whether any medical man attended that case?—The medical gentleman of the family attended it, but I could not give his name.

2124. Do you know that he attended the child?—Yes, I know that he did, and that he gave that certificate; I may say that we have asked the parents for evidence which we were to present before this Committee, and we gave them to understand that what they said was to be strictly true, and that they were liable to be called upon to give their evidence to corroborate what is here said, before any local authority, so that I am merely their deputy, and the statements here are their statements.

2125. Will you state what you consider to be the

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the strongest case?—I know very much of this case, the parent, Main Wilson Warr, of Far-cotton, Northampton, being a member of our league.

2126. Do you know the parents of the child?—Yes, I do.

2127. In what position are they?—They are poor people. Their daughter was vaccinated in the third month, who was perfectly healthy before vaccination, after vaccination she became an intense sufferer for 12 months.

2128. In what way?—Mr. Clifton, surgeon, was called in, and said that the child was full of eruption from head to foot, and no one could save it. Its ears became almost dissevered from its body, and the mother was afraid to lift the child from the pillow lest the ears should adhere to the pillow.

2129. Do you know whether that child had been healthy before vaccination?—Their testimony is that it was perfectly healthy.

2130. Do you know what the certificate of death was in that case?—I have not it here, and I cannot speak from positive knowledge, but I can state from positive knowledge, from having heard the parents frequently express it, that they firmly believe that it was caused by vaccination; and Mr. Clifton when he was called in, said as I have already stated, "Why, you have had the child vaccinated"; when this was spoken of before the magistrates at Northampton, he retorted the charge, and said that he was only speaking ironically, and so tried to evade the force of his utterance.

2131. Why were they before the magistrates?—Because the same father was under prosecution for another child.

2132. Will you now give us another case?—Mr. Green, Upper Mounts, had a little child vaccinated at two years of age, who was not very healthy. Vaccination did not seem to take at first; but at the end of one month a scalding discharge burst from the ear as though pent up. Mortification ensued, and it died in nine months.

2133. Do you know what the certificate of death was?—I have not it in that case.

2134. You say that the vaccination did not take, do you not?—It did not take at first, or at least, the poek did not rise.

2135. Do you know why they should consider, then, that the child's illness was caused by vaccination, if the vaccination did not take successfully?—They thought, as all of us think, that the virus struck upon the vitals, and therefore did not come out.

2136. Then do you think that when vaccination does not take, it is equally injurious as well as when it does take?—In a case like this I think it is much more serious.

2137. Do you consider it to be injurious both when it takes and when it does not take?—Under certain circumstances. In a case like this, where the child is unhealthy, and where the virus strikes upon the vitals, it seems to be sure to be fatal.

2138. Is there any other case which you wish to mention?—I wish to speak of one or two cases of concurrent cow-pox and small-pox which, though they are no testimony against vaccination, seem to show that cow-pox is not antagonistic to small-pox. Mr. William Hoddle, Chapel-gardens, aged 30, was vaccinated as a child, and at the age of 24 was re-vaccinated, being a militia-man. Eight days afterwards he had a fine arm,

and on the 11th day felt ill of small-pox. Another case similar is that of Mr. Rawls, of Cleveland-road, Northampton. He was one of five children, all of whom were vaccinated, two of whom had cow-pox and small-pox together concurrently. These two were cases where the two distinct diseases ran along parallel courses, and they were both severely marked.

2139. Do you know from your own knowledge whether the re-vaccination took place during an epidemic of small-pox in the place where they were living?—I cannot speak to that question.

2140. It would be possible, would it not, for them to be re-vaccinated when there was a serious epidemic of small-pox, and to have taken the small-pox at the time when they were re-vaccinated?—It would; I should like further to add that this vaccination took place not at Northampton, but at Glastonbury in Somerset, though they are now resident at Northampton. As I have already said, it is possible to have those cases examined at any local place which you might determine upon afterwards.

2141. But all those cases which you have told us about are from the information of the parents themselves, are they not?—Direct from them.

2142. Have there been many cases in Northampton of prosecutions under the Act for non-vaccination?—The number of prosecutions under the Act I believe, is about 114 at present in the town of Northampton, and at the present time the prosecuting clerk of the guardians has asked for a special day to hear 104 other cases which are still pending.

2143. Do you know whether there has been more than one penalty inflicted for the same child upon any particular person?—Yes, there is a gentleman in this room who has been twice fined. I am not able to say whether for the same child; I do not know of any other case.

2144. Have you any other observations that you wish to offer?—I should like to state the number of non-compliants in Northampton, so as to show the kind of repugnance which is felt to this Act.

2145. What is the number?—The number is 1,474, according to the return which is made by the chairman of the guardians on the 10th of December 1870, as reported in the "Northampton Mercury."

2146. Do you know in how many cases the guardians have issued summonses out of that number?—The guardians have been the conductors of all the prosecutions.

2147. But have they asked for summonses for all those cases?—No, they have not; as I have already said, the total number of cases which have been prosecuted amounts to 114, and 104 are still pending.

2148. Then you object, I suppose, personally, and a number of the Northampton people object, to compulsory legislation with respect to vaccination?—Yes; since I have been at this Committee I have had read over to me a statement of Dr. Seaton and Dr. Stevens, regarding Northampton being a nest of small-pox; that it is constantly present in Northampton, whence it is largely distributed to surrounding towns. I read here a letter or part of a letter, and that was inserted in the "Northampton Mercury" the week following Dr. Stevens's visit to Northampton, on the 19th of January 1870.

2149. From whom is the letter?—From J. H. Blunt, M.D.; it runs to this effect: "Now, Sir, I totally

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I totally deny this statement, and on public grounds challenge Dr. Stevens to prove that there is a single case of small-pox in this town at the present time, or that there has been any for a year or two past, and I think the faculty of Northampton ought either to confirm the truth, or to disabuse the public mind on such an important question."

2150. Is that gentleman a resident in Northampton?—Yes. I have also statements I should like to offer from medical gentlemen who are pro-vaccinators, who certainly would not underrate the fact. The first of which is given under the joint signatures of Drs. Barr, Moxon, and Evans, three gentlemen (and 19th February 1870) who are giving in their report to the Committee of the Royal Victoria Dispensary. The next is by Dr. Bryan, "Northampton Mercury," 17th December 1870. This is a letter sent to the board of guardians to incite them to prosecutions, based upon the fact that two small-pox cases have appeared in his practice: "We beg to call your attention to the difficulty of carrying out vaccination in the town, owing to the prejudices which exist against it in the minds of the poorer classes, and also to the neglect of the board of guardians to carry out the Vaccination Act. Fortunately we have had no cases of small-pox during the past year." He goes on further to say: "But there is every reason to believe that if the disease were once introduced its spread would be very rapid, and amongst such a large mass of unvaccinated persons would prove generally fatal." Dr. Barr, before the Council, 11 March 1871, said, "unfortunately one case of small-pox had occurred in the town." These three are the only cases which have broken out, and two of which happened more than 12 months since; and as to the probable effect of it, we have to say that so far as we have ascertained in the cases before us, as reported by Dr. Barr, when asked by one of the councillors whether it was a vaccinated case, he said that the case he reported was a small-pox case modified by vaccination.

2151. Do you wish to show to the Committee that Northampton is not the seat of small-pox?—That it is free from what the charge would imply.

2152. Do you know that at the present time it is free, as far as you can speak, from small-pox?—I am quite confident that if there was any one case the medical authorities would report it.

2153. Dr. Lyon Playfair.] I think that in the cases which you brought before us of death following vaccination, you only gave us one certificate of death, that being a certificate of death from convulsions?—Yes.

2154. In all the other cases you gave us none of the certificates which have been given by the medical men in attendance, did you?—No.

2155. In the case of the unhealthy child the vaccination you said did not take?—I said that it did not seem that it had taken.

2156. And it afterwards died with some affection in the ear?—Yes.

2157. Do you consider that you are justified in saying that the child died from the effects of vaccination?—I think I am.

2158. Your theory was, as I understood it, that if the vaccination did not take, it was more dangerous, because it preyed upon the vitals?—In a weakly child I think it does so.

2159. Are you of opinion that if the vaccination does not take, and if there are no feverish

symptoms, and it seems to have failed altogether, therefore it is more dangerous?—My opinion is based upon whether the child was sufficiently strong to resist the disturbance of the balance of the system.

2160. The disturbance of the system takes place where vaccination has taken; but supposing that there is no disturbance, either local or general, following a failure of vaccination, do you consider still that it preys upon the vitals, and therefore is more dangerous?—I have already answered that question in another way, by saying that unless the child be weakly I do not think that vaccination, when it does not take, has any effect at all.

2161. What proof have you that it has any effect where it does not take?—I did not state that it did not take; I said that it seemed not to take, and the reason I used that term was that the pock did not rise.

2162. Where you had no local disturbance, what was your evidence that it produced any effect whatever?—The fact that the child straightway dwindled and died.

2163. It died of some other disease altogether, did it not, in the year?—It died of mortification ultimately; first, the ear burst out like a spigot.

2164. How long was that after this failure of vaccination?—One month after the apparent failure; the apparent failure being that the pock did not rise upon the arm.

2165. There was no feverish inflammation following the vaccination, was there?—The child was ill all the while.

2166. But was there any appearance upon the arm?—The pock did not rise.

2167. Would you consider that if a match was put to a fire, and the match went out and did not set the fire in a flame, it was more dangerous than an inflammation that actually took place with the match alight?—If the match went out it went out, and there was an end of it.

2168. Do you not think that when vaccination fails it goes out exactly in the same way?—In this case I believe the fire smouldered and broke out suddenly.

2169. It is your belief that it went to the vitals, and preyed upon the place called the vitals?—That is my opinion.

2170. Sir Smith Child.] Did you state that the authorities mentioned that there were a thousand persons in Northampton not vaccinated?—The report that I give is from the guardians, and it states that there are 1,474 at the date of the 10th of February 1870.

2171. Is that the general population or children merely?—It is those that would fall liable to the Act. The raid is only made upon children under 12 months.

2172. What is the whole population of Northampton?—I think the last census return was 35,000.

2173. Mr. Candlish.] Is it now 40,000?—I think it is very probable, but as the census has not been taken I cannot say.

2174. Mr. Smith.] How long have you been the secretary to this society?—Not more than three months.

2175. Have you any other children than this girl, Annie Covington?—I have two others.

2176. Are they vaccinated?—No.

2177. Have they ever suffered any illness?—They have both had the small-pox. The little boy had it so lightly that he has no trace of it.

Mr. 2178. Has the elder girl, who suffered from
F. Covington. illness for nine months, had the small-pox?—She
has not.

21 March 2179. She has escaped it altogether?—She
1871. has escaped it altogether.

2180. Has she been living in the same house
with her brother and sister?—Yes.

2181. I think you stated that you came to the
opinion on reflection that the illness she had was
due to the vaccination?—I did.

2182. After what period of reflection was it
that you came to that opinion?—I cannot say
definitely. It is 11 years since the child was
vaccinated. I have held my opinions now, more
or less tenaciously, for about seven or eight years.

2183. Then you came to that opinion about
three or four years after the illness from which
she suffered?—I came to that opinion when the
abscesses broke out; when I saw them all round
the seat of the punctures.

2184. I think that is hardly consistent with
the evidence you gave just now, because the evi-
dence you gave was this: "At the time I had no
idea that the illness was consequent upon vaccina-
tion; the doctor did not say it was, and I did not
ask;" and then you said afterwards: "On reflec-
tion I came to that opinion?"—Yes, but you con-
founded the two things; the illness that I spoke of,
that continued nine months, and the abscesses
that formed and broke. It was not the illness
that caused me to think that it was vaccination,
but it was the abscesses that came round the seat
of the puncture that led me to conclude that that
certainly was the primary cause.

2185. Did you come to that opinion immedi-
ately the abscesses presented themselves upon the
arm?—No; not until the abscesses were all
formed, and when the whole panorama was before
me; and then I drew my inference. The child
would be at least four years before the abscesses
healed; I think probably more.

2186. You specially referred, did you not, to
the abscess on the left side of the bowels, as being
conclusive in your opinion?—The degree of evi-
dence was, I think, intensified, as I found them all
about on the left arm, round where the child was
cut. I confess I was a little strengthened like-
wise when I found that the left side was the
chosen spot for the abscess to break out on the
bowels.

2187. None of your other children have suf-
fered in that way at all, I think?—My other
children are perfectly healthy. They were never
vaccinated, and they have had the small-pox.

2188. They have not had any illness at all?—
Not worthy of mention.

2189. Your child, Annie Covington, is per-
fectly well now, I think you said?—She is quite
well.

2190. Has she recovered from this illness alto-
gether?—She has quite recovered.

2191. Mr. Taylor.] Has it come within your
observation whether vaccination acts as a protec-
tion against an attack of small-pox in children?
—I know several cases where it has not been a
protection, and I know other cases where they
have not been vaccinated and have escaped; so
that I think it is like a chip in porridge, it does
neither good nor harm when it does not fall upon
the vitals, and there is sufficient strength to
throw it off.

2192. Do you think that vaccination is inju-
rious to the constitution, so far as your observa-
tion goes?—I do, especially upon the weak.

2193. You have a strong opinion, have you
not, from your observation, that it acts as a blood
poisoner, as it is called?—I believe it conveys
consumption and syphilis, and many other like
diseases.

2194. If, therefore, you knew of a child who
was vaccinated, and it should die within 12
months of erysipelas, you would have a great
tendency to believe that it was the result of vac-
cination, I presume?—That would depend upon
whether it was directly traceable. I should not
infer it heedlessly, and without having plenty of
ground to draw my conclusion upon.

2195. Would you judge from irritation appear-
ing in the arm where the wound was made?—I
should judge from any symptoms that appeared
that was likely to lead to such a conclusion.

2196. But the likelihood depends upon the
theory with which you start; supposing that a
child is vaccinated, and it has the erysipelas, you
have a theory, have you not, that it would be
probable that the erysipelas proceeded from vac-
cination?—If a child was vaccinated and remained
well after vaccination, and then was taken ill of
a disease 12 months afterwards, I should not be
so foolish as to conclude that vaccination had
anything to do with it; but on the other hand, if
it were immediately consequent, I should think I
had a right justly to infer that it was a conse-
quence of the operation.

2197. Dr. Brewer.] Have you any experience
of dairies; have you ever seen cows?—Of course
I have seen them.

2198. Are you at all acquainted with the
health of those young women who are busied in
milking cows, and so on?—I know that in our
rural districts young women and young men
generally are healthy.

2199. Those who are busied with cows?—Not
more so than any others that live with them.

2200. But do not all the young women in farms
milk cows?—No.

2201. You think there are some people who
do not milk cows upon any occasion in farms?—
I know, as far as my experience is concerned, the
major part of the milking is done by men.

2202. Do you find that those men and those
women are more liable to scrofula, consumption,
erysipelas, and other diseases, than town's people
who are not vaccinated?—No such facts have
come under my observation.

2203. Have you ever seen a malignant case of
small-pox in a person not vaccinated?—I do not
remember one.

2204. Should you be prepared to conclude
that medical men of the largest experience in the
profession, such as Dr. Marson and Sir James
Simpson, would think it the most miserable and
most deforming disease we know of?—I know
that in the large factories at Northampton, dis-
cussions have arisen as to who are the greatest
sufferers, the vaccinated or unvaccinated cases,
and as much defacing has been consequent upon
the taking of the disease in vaccinated cases, as
in unvaccinated cases.

2205. Are you prepared then, from your own
knowledge, to say that those who are busied with
cows are more liable to consumption, scrofula,
and erysipelas, than other people?—I know a
good deal of village life, because of the capacity
in which I serve, that is as a lay preacher, going
all round the rural districts, and the knowledge
that I have of those parties is, that their health
is pre-eminently good. I refer to the rural dis-
tricts

tricts generally, and not to any special part of them; those that have to do with agricultural pursuits.

2206. Are you aware that it is not a very uncommon thing for either sheep, or pigs, or cows, to have either the disease which we call *vaccinia* or small-pox?—I am not aware of it.

2207. You are aware, I suppose, that the udders of cows are sometimes infected with *vaccinia*?—I know I have read that in cases when due cleanliness has not been observed, the friction of the hand has inflamed the udder.

2208. You are not aware that *vaccinia* was ever taken from a diseased cow?—I know that is what Jenner bases his theory upon.

2209. But you are not aware that in modern times the cow ever has the disease called *vaccinia*: do you know at all how small-pox spreads?—It is always admitted to be contagious.

2210. You have read about it, of course, though you are not a medical man, before you took your present position of responsibility?—Yes.

2211. Have you read of any of the outbreaks of small-pox?—I have.

2212. Do you remember the case of Leith, spoken of by Sir James Simpson in 1861 and 1862, when small-pox was introduced by a woman who was a tramp?—I do not.

2213. That woman introduced the disease into Leith, but you do not know anything at all about the cases?—I do not.

2214. What cases of small-pox have you ever seen, about the origin of which you have known anything at all?—I could not charge my memory with a number.

2215. Have you seen 500?—I have not.

2216. Have you seen 100?—I have not.

2217. Do you think that your experience in small-pox is comparable to that of a scientific medical man who has seen 20,000 registered cases and dealt with them, and are you as capable of giving an opinion upon the nature of the disease, its origin, its treatment, its character, its relative mortality, and the relative intensity of the attacks?—I was not aware that I came here to do anything of that kind.

2218. Mr. *Candlish*.] If you had read of the case reported by Sir James Simpson and brought it here, you might have been met with the objection that it was hearsay evidence, might you not, so that you could not have spoken to it?—Yes.

2219. Are you in business?—I am.

2220. As what?—As a tailor.

2221. Are you a local preacher among the Wesleyans?—Among the Baptists.

2222. Did I correctly understand you to say that the abscesses formed upon your daughter four years after vaccination?—The abscesses continued until she was over four years of age.

2223. When did they form?—They began to form when she recovered from the illness which prostrated her for nine months.

2224. Nine months intervening between the vaccination and the formation of the abscesses, would you still attribute the abscesses to vaccination after the answer which you gave, that if a year intervened you would not connect the two things as cause and effect?—The system had been disturbed from the time that the vaccination was performed; if perfect health had intervened I should not have imputed the abscesses as consequent upon the vaccination.

2225. How many children have you?—Three.

2226. Two of them have had small-pox, and one has not, I believe?—Yes.

2227. The one who has not had small-pox remained in the same house with the other two, while they had small-pox, did she not?—Yes.

2228. Would it not be somewhat reasonable, at all events for those who believe in vaccination, to assume that the girl was protected in consequence of having been vaccinated?—I have to say in reply to that, that a neighbour of mine, with whom I am perfectly familiar, had two daughters, the eldest was vaccinated and fell ill with small-pox, the younger one slept with her, and nursed her, without taking any disease, and she was unprotected; so that I put my ease against theirs, and say that the thing is nil.

2229. It balances the account, you think?—It balances the account.

2230. It leaves the whole thing in a state of uncertainty?—It neither settles one point nor the other.

2231. Both are facts?—They are facts, indisputably.

2232. Have you been summoned before the magistrates?—I have not; I am not liable.

2233. What ages were your children when they had small-pox?—It was the youngest who first had small-pox, and she took it when she was about three weeks old. The nurse took her into some locality, where I do not know, and brought it home, and she had it very severely; my little boy took it of her, and had it as lightly as it was possible for a child to have it.

2234. What age was he?—About two years her senior.

2235. What age was your eldest daughter then?—About two years older than the boy; about four years old.

2236. Had the abscesses disappeared at that time?—They lingered quite until she was four, and I think possibly beyond that date.

2237. What were the ages of the two children in your neighbour's case, one of whom had the small-pox and the other did not take it?—I think the ages were about nine and seven. The younger one was unprotected, and the elder one was not.

2238. What followed the 114 summonses before the magistrates?—The greater part of the poor people succumbed in the way of complying with the Act. The intelligent and respectable people, and men of thought and principle, paid the fine, and three out of them went to prison.

2239. You are speaking of the ignorant in the one class, and intelligent men in the other; are you speaking from personal knowledge of them?—I am.

2240. Have any of the 114 people been summoned again?—Mr. Tippler has been twice summoned.

2241. What followed in the second summons?—An increased fine in the second case.

2242. Did he pay?—Both fines were paid.

2243. Who were the men that went to prison rather than pay?—A man of the name of Mr. Hasdell went to prison. It was a matter of principle; he was determined not to pay what he thought the authorities had no right to exact from him. Friends offered to pay it for him if he were willing to accept it.

2244. What happened in the case of the other two?—I forget the name of the other; it was a member of our league who went to prison, but when

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when he had been in two days his wife went and paid him out.

2245. Then a law limiting the penalty would not have delivered those men from what they would regard as persecution, I suppose?—It is a conscientious objection that men have in Northampton against this law, thinking it an invasion of parental rights.

2246. If there had been one penalty only, it would have been just the same thing, you think?—They would pay the penalty rather than comply.

2247. Would they go to prison rather than pay, if there was only one penalty?—I think in the case of Mr. Hasdell, if it had been one penny he would not have paid it.

2248. Then a law limited in its penalties would not be a relief to the people of Northampton?—I believe it would to the greater part of the community, except in cases where people are very hard in their feeling against vaccination. The prosecution has been rather partial, although there have been so many cases; 1,474 cases were standing from the 10th of December 1870. The first raid was made upon the officers of the Anti-vaccination League.

2249. You mean that they were the first parties summoned, I presume?—Yes, and it appears to me that it was a very partial affair; they were not taken alphabetically; they were not taken because they were first in the offence.

2250. I suppose it is quite usual in the execution of any laws to deal first with those who are supposed to be the ringleaders in breaking it, is it not?—I suppose that was the case.

2251. There is no partiality in such a procedure, is there?—I should think it was rather partial if it were such a case as you describe.

2252. You have spoken of the invasion of parental rights; do you hold that the same persons would regard it as an invasion of their parental rights if they were compelled to educate their children?—Education is an undisputed advantage and vaccination is very disputable.

2253. Is that the distinction which you draw?—That is the distinction I draw.

2254. One word more as to the partiality of the procedure; you are the Secretary of the League, are you not?—I am.

2255. You are the "Head and front of the offending" then?—I am aware that my position is rather a serious one.

2256. And you have not been summoned?—Because there is no ground for summoning me; I have no child that is liable.

2257. Your two children have had the small-pox?—Yes; there is a clause in the Act that renders me not liable.

2258. Is there any prevalent medical opinion in Northampton in favour of your views?—Dr. Blunt is a gentleman that is favourable to our views.

2259. Is he a homœopathic doctor?—A herbalistic doctor.

2260. Is he a Member of the Royal College of Surgeons?—I cannot say as to where he had his diploma from, but I know that he is an M.D.

2261. Are there any other practitioners who hold similar views?—Mr. J. P. Berry, who is a Member of the Royal College of Veterinary Surgeons, is one of our friends.

2262. Does he adopt your views?—That is what I mean by calling him one of our friends.

2263. How do you account for the fact, that

notwithstanding what I understand you to say is the prevalent public opinion, so little medical opinion is in your favour?—Though Northampton has been, as Dr. Seaton says, the seat of small-pox, it has enjoyed an immunity from small-pox for three whole years, and only three cases have appeared, whereas the evil effects of vaccination have appeared on every hand; that is the groundwork, I believe, of the altered sentiment of Northampton.

2264. But do you not generally find that the opinion of the doctors will follow the opinions of the people?—I believe the Northampton people are people who are in the habit of coming to conclusions on evidence, and they judge the doctors' decisions in the same way as they judge theological dogmas or political theories.

2265. Then the fact that there is a large public sentiment in Northampton against vaccination, and that the doctors still hold to vaccination is tolerably strong proof of their conscientious views in favour of vaccination, is it not?—Certainly, I think so.

2266. It is not a money advantage, or adhesion to a system that keeps medical men in Northampton to the doctrine of vaccination, I presume?—So far as I am concerned it has cost me many pounds a year to maintain my sentiments, in the labour that it has involved.

2267. It has been stated to this Committee that doctors hold to vaccination because they get their bread and butter out of it; that is not the case with the doctors at Northampton, I suppose?—I do not wish to judge doctors' motives.

2268. If the public are against vaccination, and the doctors are in favour of it, the doctors are against their own interests, are they not?—If I were to give my opinion as to what the doctors' interest is, I should say that it was to propagate vaccination, because it makes a great deal of disease.

2269. Would it be their interest to propagate vaccination against the wish of the population?—If they esteem the respect of the population they would sustain a loss, but if it is a mere monetary advantage that you speak of, I believe that to scatter disease is to bring gain to the doctors; but I do not say that I think that is their motive. I merely put it as an answer to your question.

2270. Do you know a medical man in Northampton who has seen those several cases which you have mentioned, or any one of the cases you have mentioned, who would come before this Committee and attribute death to vaccination?—As I have already stated to the Committee with regard to Mr. Clifton, he told the people when he went in that they had had their child vaccinated. He said, "You have had your child vaccinated—it is full of eruptions from head to foot, and no one can save it;" but when that was stated before the magistrates he tried to evade the effect of his own words, by saying, that when he uttered the words, he uttered them ironically.

2271. Your answer to my question is, that there is not a medical man in Northampton who, knowing the cases, would come here and confirm your views?—I believe the medical authorities there are all pro-vaccinators, excepting the two that I speak of.

2272. Mr. Cave.] You state that education is universally acknowledged to be a good thing; do you not know that some parents object to have their children educated, because they think

think they can be more usefully employed in other ways?—I am aware of that.

2273. Would you think it right to compel the parents to have their children educated under those circumstances?—That would depend upon circumstances.

2274. Upon what circumstances?—I think before we should compel anybody to educate, we ought, at least, to be quite sure that they could live; the objections not being that education is not a good thing, but that it is not a practicable thing under certain circumstances.

2275. You think that under those circumstances they ought not to be compelled to educate their children?—I think it would be a grievance in such cases.

2276. In those cases which you gave us in the early part of your examination, are the parents that you mentioned educated people?—There are several gentlemen of position and education whose antipathy (for it amounts to antipathy) to vaccination is very great, because they have lost their children; but they are not willing for their names to be mentioned to this Committee, because of trade interests.

2277. Then those whom you have mentioned are not educated people?—Mr. Cosford is a man of good position; he is a farmer and a miller, and though not a man whom you would call an educated man, he is a man of good, sound, broad common sense.

2278. Did you see in a paper to-day that a farmer attributed his illness to witchcraft?—I think there is as much distinction between farmers as there is between men in general.

2279. You mentioned the fact of his being a farmer as being sufficient to show that he was an educated man, did you not?—No, I did not; I know some most intelligent men, and I know some most unintelligent men among farmers.

2280. I simply wish to know whether those cases which you have mentioned are those of people whose intelligence would be above this idea of such causes of illness as witchcraft, for instance?—In the case of Mr. Wiggins, whose daughter I referred to as being subject to syphilis, and who has gone into foreign countries and travelled all over the world, I could not think him such a fool as to believe in witchcraft.

2281. Does that apply to all the cases you have mentioned?—Some are of greater intelligence than others, but all are of average intelligence as common sense people.

2282. It is of importance to ask that ques-

tion, when we have the cases through you only by hearsay; is there any medical evidence with regard to those cases which you mentioned of small-pox and cow-pox existing at the same time?—Mr. Hoddle was then a militiaman, and was ordered home from the militia by Dr. Barr.

2283. Did Dr. Barr say that it was a case of small-pox and cow-pox together?—Mr. Hoddle had just been re-vaccinated, and there was no ground for denying it, as the whole regiment was re-vaccinated.

2284. But did he say that it was a case of small-pox and cow-pox at the same time?—The man had the pustules in full form on the eighth day.

2285. What pustules?—Arising from vaccination; the cow-pox; and on the 11th day he was stricken with small-pox.

2286. But upon what testimony do you mention that fact?—I have his autograph letter in my pocket, if you would like to see it.

2287. But you have no testimony from Dr. Barr, for instance, as to that?—No; but there is the fact that he stated it, and that the man was sent home because of his illness.

2288. *Chairman.*] I suppose the fact of the whole regiment being re-vaccinated at one time would rather show that there was some epidemic of small-pox at that time in the place where the regiment either was or was going to?—I am not aware of the reason; but I thought it was a regular custom at given intervals to re-vaccinate the whole of the army.

2289. I suppose you know that now, in consequence of the epidemic of small-pox which at present prevails, the regiments have been re-vaccinated to a very great extent?—Yes.

2290. Therefore it is possible, is it not, that this Mr. Hoddle may have had the small-pox upon him at the time he was vaccinated, or re-vaccinated?—The cow-pox had risen on the 8th day, and it was not until the 11th day that the small-pox symptoms appeared. The time when he was re-vaccinated was when he was 24, which is six years from this time.

2291. Will you state exactly the number of days in which small-pox appeared?—On the 11th day.

2292. Are you aware that the incubation of small-pox, when it first appears, is 12 days?—I am not able to speak scientifically; I only know that he was sent home on the 11th day with small-pox.

Mrs. ELIZABETH KEMP, called in; and Examined.

2293. *Chairman.*] WHERE do you live?—At 14, St. Ann's Court.

2294. Have you had a child vaccinated?—Yes (*producing a baby*).

2295. How long ago was that?—I think about seven weeks ago.

2296. Is that the child that you have in your arms?—Yes.

2297. What age is it now?—It will be nine months old on the 3rd of next month.

2298. Who vaccinated the child?—Dr. Rogers, of Dean-street.

2299. At the public vaccine station?—I went to his shop, and took the baby to his shop.

2300. He is not a public vaccinator then, is he?—Yes, I believe so, for the parish.

2301. Was your child well, up to the time of 0.37.

being vaccinated?—Yes, except a small pimple on the side of the head. It had a sore on its head before it was vaccinated.

2302. When it was vaccinated, did the doctor see it at all, and examine it to see whether it was healthy?—I took it the week after he had vaccinated it.

2303. But before he vaccinated the child, did he ask you as to the state of its health?—No, he did nothing.

2304. He did not examine the child?—No, he did not.

2305. Do you know on what day he vaccinated it?—No, I do not know the day of the month.

2306. What took place after the vaccination?—As the arm began to take, so the face and ears all

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all broke out; there are all the scars left on his face now; you could only just see his little eyes.

2307. How many days was that after vaccination?—I think about three or four days.

2308. Did Dr. Rogers see the child when it was in that state?—Yes, one day the week after when I took it, he said it would do very nicely and he would not touch the arm.

2309. He did not take any matter from it?—No, he did not.

2310. How soon did the child recover?—I took him to the Gerrard-street Dispensary, and there I saw two young doctors, and they said it was the small-pox, but I went home and told my husband, and he said he knew that it was not the small-pox because he had had the small-pox himself; so I took it to a doctor in Silver-street, and I paid him 1 s. 6 d. for a small bottle, and he said it was not the small-pox at all; I said I had two more little children and if he thought there was any harm I would send them away, but he said no, there was no harm, I need not send them away.

2311. What did he say that it was?—He would not tell me what it was, but the child's head is always on one side hanging over his shoulder; I do not know whether that is through the vaccination; it is not so bad to-day.

2312. How soon did the child seem to come to

his natural state again?—It is only within this last week or so; Mr. Emery saw it when it was very bad.

2313. Dr. *Brewer*.] The poor little child had a little disease in the head previously?—Yes.

2314. Mr. *Candlish*.] Is it there now?—No, only the scar.

2315. Dr. *Brewer*.] After vaccination did that little disease go away?—No, it did not, and it got bigger with the face.

2316. Did the eruption last a long time?—It lasted about three weeks.

2317. Did the child suffer much in health at the time?—No, it was pretty well in health excepting the face.

2318. And now do you think that the child is getting quite well?—Yes, he is getting quite well now.

2319. He looks strong and well; did you put the child into a warm bath at all?—No.

2320. Do you do so now?—Yes, I always do so now.

2321. But at the time when he was vaccinated you did not put the child into a warm bath?—No, I did not then.

2322. *Chairman*.] Have you any other child?—I have two other children older than this one.

Mr. THOMAS BAKER, called in; and Examined.

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2323. *Chairman*.] WHAT is your profession?—I am a Member of the Bar.

2324. You wish to offer some information to the Committee with respect to the subject of vaccination; have you heard the evidence given by other witnesses?—Yes.

2325. Have you any information to give to the Committee which differs to any extent from the evidence which has already been given?—Necessarily I have not much to say on the subject of vaccination, excepting that I know many cases of the failure of vaccination to protect from small-pox.

2326. Are there cases which have come within your own knowledge?—Yes, they are personally known to me.

2327. Had you seen the children at the time?—They are not children; they are cases of persons who have had small-pox after vaccination; that is to say, after having been vaccinated, proving that vaccination is not a protection for life as alleged by Dr. Jenner; two of them were vaccinated by Jenner himself.

2328. You do not allege, do you, that vaccination is no protection at all?—I very much doubt it. One of the cases was vaccinated, and re-vaccinated at the age of 25, and had small-pox at about 30, and her life was despaired of.

2329. I suppose that in that case the small-pox was not fatal?—She did escape; thanks to vaccination, (she was told) she had just escaped. One infant which I have personally seen within the last year has been affected with what is called eczema ever since vaccination; of course the parents are told by the doctor that it is not due to vaccination.

2330. Have you seen the child?—I have seen the child frequently.

2331. Do you know whether the child was healthy before?—It was quite healthy before.

2332. How soon after vaccination did this disease break out?—I do not remember quite

how soon; some weeks may probably have elapsed first. Parents are told by doctors in these cases that vaccination has nothing to do with it, but, of course, it is open to parents to say that such men do not understand what they are talking about.

2333. I suppose that you do not say that disease does not break out in children which are unvaccinated?—I do not give any opinion upon that point. Perhaps I may say, that I was myself engaged in the office of the first General Board of Health, from 1849 to 1854, and I have given much attention to sanitary questions and statistics, I was much occupied with the preparation and printing of the Board of Health Reports, especially the second Report on Quarantine. I visited every house in which fever had occurred during the celebrated epidemic in Croydon in 1853; that was a marsh fever, but was alleged to have arisen from drainage works; I was also Secretary to the Royal Commission to inquire into the Sanitary State of the Army in India, so that I have had some experience on these matters.

2334. Can you offer any evidence with respect to the alleged increase in the death-rate, though epidemics have diminished?—From the experience which I have had upon those questions generally, of course, I have formed some opinion with reference to epidemics. I believe that cleanliness is the great prophylactic against all epidemics, including small-pox. Epidemic diseases, though they are called by a common name, present great differences in their external characters. The plague, yellow fever, cholera, small-pox, typhus, scarlet fever, and influenza, present characters so special that they have necessarily been regarded as different diseases, and they really are so different as to render it desirable that they should have distinctive names; but notwithstanding this great diversity in form, they present very striking resemblances; for instance, epidemics

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epidemics resemble each other in being all fevers. The common epidemics of the day, such as typhus, scarlet-fever, small-pox, measles, are so universally recognised as fevers, that the popular notion of fever is derived from the external characters which those maladies present. Epidemics resemble each other in the extent of their range; in the rapidity of their course; in giving distinct and unmistakeable warnings of their approach, and in many other characteristics.

2335. Then what do you wish to prove from the opinions which you have just stated?—I wish to prove that civilisation has improved out of the country many epidemics, and would also improve out of it small-pox, or ought to have done so, and would do so without anything more.

2336. It has been stated here by several witnesses, that though small-pox may be diminished in its fatal results and in its intensity, at the same time other epidemics have increased, that is to say, that if a certain number of lives are saved from small-pox, either through protection or in some other way, an increased number of deaths takes place from scarlet-fever, or typhus, or other diseases of that nature; do you agree with that?—Not on account of the diminution of small-pox.

2337. When a diminution of small-pox takes place, is there an increase of other diseases, in your opinion?—There seems to be what Dr. Gregory has called a law of vicarious mortality; but I believe the death-rate has diminished, and it ought to have diminished more.

2338. Taking the annual death-rate altogether, do you believe that it has diminished?—I believe it has.

2339. Have you any evidence to offer with respect to the operation of the Vaccination Act?—If you will allow me, I think I might first state an opinion, which Dr. Southwood Smith himself expressed to me with reference to vaccination. Dr. Southwood Smith will be taken, I suppose, as the first authority on sanitary matters of any age or any country; and I consider that the opinion of such a man is of great importance. I, myself, put a question to Dr. Southwood Smith when I first began to inquire whether it was possible for any person to doubt the efficacy of vaccination. It was quite by accident that it came to my knowledge that anybody in the country was opposed to vaccination, and I saw that there was something to be said on the other side. Being an intimate friend of Dr. Southwood Smith, I put a direct question to him: did he consider that if sanitary works were carried out as they ought to be carried out, we should be improved out of small-pox without vaccination; whether civilization was capable of getting rid of small-pox, as it has of sweating-sickness and plague, and other diseases? His answer was, certainly that he was of that opinion. That was sufficient to convince me as a layman that I had a right to take the course which I thought right, and that other men have a right to take the course which they think right.

2340. How long is it ago since you put that question to Dr. Southwood Smith?—I think it must have been about the year 1855 or 1856.

2341. Since that time have you been opposed to the system of vaccination?—Not entirely from that time, but from reading and observing what has been going on in the country, and partly from the unfair manner, I may say, in which the subject has been treated by vaccinators, I have been led to this conclusion.

0.37.

2342. What do you mean by the unfair manner in which the subject has been treated by vaccinators?—All sorts of motives have been imputed, and I think that that is always a confession of weakness on the part of those who resort to it.

2343. What do you mean by motives having been imputed?—There are besides several facts which have come under my observation. Mr. Duncombe was lectured for having a letter against compulsory vaccination, which was written to Sir Benjamin Hall, then President of the Board of Health, printed for the information of the House of Commons; Mr. Duncombe told me so himself, and he told me the answer which he had given; if the subject had been fairly treated, probably I should never have thought anything about it, but I always like to see fair play. This paper was very highly spoken of by one of the greatest men the world ever saw, Baron Humboldt; I was shown a letter from him in reference to that paper of which this (*producing a Paper*) is a facsimile. The letter contains the following passage: "I have been so much struck with the merit and penetration of mind which distinguishes the work of Mr. Gibbs, that I remember having spoken of it with just praise to my illustrious friend Mr. Schönlein, the first physician to the King, who perceives with me the progressive advance of opinion respecting the dangerous influence [?] of vaccination in France, in England, and in Germany." This letter was written upon the Paper presented to the House of Commons, and printed for the information of the House of Commons; for the presentation and printing of which Mr. Duncombe was lectured by some Members for wasting the public money in printing "rubbish."

2344. Mr. Candlish.] Have not the two parties abused each other in the matter, and does that tend to elucidate the subject which this Committee are considering?—A great deal is said upon the opinions of medical men, as if they alone were to be consulted, or capable of forming a judgment, but I consider that the opinion of such an enlightened philosopher as Humboldt is more worthy of attention than that of any number of paid officers, or that of the whole medical profession together.

2345. Is not the mere reference to the fact that they are paid officers a disparagement?—Possibly.

2346. Chairman.] Did you not use those expressions with regard to motives and unfairness to show your reason for changing your opinion with respect to vaccination?—Not for changing my opinions, but for opening my eyes to inquiry. In Mr. Simon's Report on Vaccination there is this passage: "Nor, so far as I know, can it be said that any person enjoying in the smallest degree the confidence of the profession, or in the smallest degree entitled to offer an opinion on medical evidence, maintains that, properly performed, vaccination is a dangerous proceeding." "To the English medical reader such papers" (that is, against vaccination), "if they come at all, come only as a kind of literary fossil, reminding him of something so utterly unpractical, antediluvian, and extinct, that the last act he would think of committing against them would be to argue. Yet these foreign publications obtained a momentary notice in the last Parliament. And now, standing at the very threshold of the subject on which I must enter, they compel some recognition at my hands

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hands. It is really quite impossible for me to speak of such writings with even the semblance of respect. I am willing to believe that the authors are not actuated by unworthy intentions, but the works are so ignorantly and so impudently written, their staple consists of such reckless guess-work, or such mere declamation and balderdash, that it would be a mockery to treat them as belonging to the literature of science." I am asked to justify myself for using strong arguments, and I think that I am justified in showing what arguments have been used on the other side, as it is called, as well as on our side, though I am on no side. I saw also, among other things, that petitions which have been shown to me and presented to Parliament were entirely unnoticed by the Committee on Petitions, whereas I thought that on an important subject such petitions should have been printed at length. The members of the Petitions Committee were, or have been, often in the office of Vice President of the Council, as in the case of Mr. Lowe and Mr. Bruce, and other public officers. The knowledge of the facts was therefore thus practically suppressed by what people may call prejudiced minds. They have an opportunity of being instructed at the Council Office, and then when petitions from parents, or from such a man as Dr. Pearce, who has been examined before this Committee, petitions which I have seen, drawn out at great length, are presented, they are practically unnoticed in those reports.

2347. I suppose you know that the Petitions Committee is perfectly independent of the Government, and perfectly independent of every department?—I do not know that, because I see the names of official persons on those Committees, and I know how official persons are influenced by others who are in office with them. In 1856, for instance, there were as many as 109 petitions, I think, presented to the House.

2348. Do you mean by your last answer to charge the Petitions Committee with not fairly publishing the petitions which are presented to the House?—They were not fairly published; whether it was the fault of the Petitions Committee, or how it was managed, or by what coincidence such accidents frequently happened, I cannot tell; but I know there are a great many wheels within wheels, and there may be a great deal of wire-pulling behind the scenes.

2349. Mr. Alderman Carter.] Have you any reason for imputing unfairness to the Petition Committee?—I am speaking generally. So far as I am able to discover I do not believe that these Acts of Parliament, which are most arbitrary and tyrannical, have ever been fairly discussed in the House of Commons, and I think that one means of keeping such from discussion is not to print these petitions.

2350. But printed copies of all petitions are sent to Members of Parliament?—I beg your pardon; I think you are wrong.

2351. Is not any unusual petition, like this which you speak of, printed and sent to Members of Parliament?—I think you will find that it is not so.

2352. Chairman.] I suppose that what you wish to say is, that some petitions which are presented to Parliament, do not appear in the printed return of petitions?—The great bulk of them do not. The allegations on an important question of this sort, should have been put before the Members of the House and the public.

2353. In saying that you do not mean to say that a different procedure takes place with respect to petitions on vaccination, from that which takes place with respect to petitions on other subjects?—I suspect that it does, because there is a strong interest behind the scenes.

2354. Will you proceed with your evidence with special reference to vaccination?—I have been for upwards of 20 years a shareholder in the Metropolitan Association for Improving the Dwellings of the Industrial Classes, for 17 years of which I have acted as auditor to that association. In 1854, Dr. Southwood Smith published a pamphlet, showing results, especially as regards statistics, in reference to the dwellings up to that time.

2355. But how is that connected with vaccination?—In this way: the dwellings of this association are dropped down into the middle of the fever nests of London. The mortality returns show that almost every year we save an average of from 7 to 10 per 1,000 in the mortality in those dwellings situate in the midst of the worst districts in London, and the comparison is for the whole of London.

2356. What you wish to show, I presume, is that the health of the persons living in those houses is better than that of persons living in the fever dens in London?—Yes.

2357. How do you mean to apply that to the question of vaccination?—I mean to show that civilisation and cleanliness are the way to get rid of epidemics of all sorts, of which small-pox is one. One of the returns of the Registrar General states that one-fifth of the whole population has yielded more than half of the fatal cases of small-pox; but in the dwellings of the Metropolitan Association in those very spots there have been only two such cases in a population of about 4,000.

2358. Mr. Alderman Carter.] Is that a private company?—Yes.

2359. Chairman.] Do you mean that the number of cases in those houses is smaller than in the adjoining houses, which are in a much less healthy state?—They prove that small-pox cannot live and spread there under conditions of cleanliness. You may have sporadic cases; you do have sporadic cases, and so you have of other fevers, but they do not spread; and therefore it shows that cleanliness is the true prophylactic, and not any nostrums like vaccination, which is lowering the whole tone of the public health. I wrote to the secretary for a return of the mortality in the Metropolitan Buildings for this year during the epidemic, and his answer amounts to this, that out of a population of 3,939 there have been two deaths from small-pox. I have not the ages of the persons who died, but I consider that stronger evidence than if there had been no small-pox.

2360. Have you any evidence with respect to the persons inhabiting those houses of which you are speaking, as to whether they were vaccinated or unvaccinated?—One of the cases is returned by the secretary as not vaccinated, and therefore I infer that the other was vaccinated.

2361. Was that in one of the two cases which died?—Yes.

2362. Have you any evidence to show whether the people are vaccinated at all who live in those houses?—No. We take no cognizance whatever of the health of the people, further than that they shall have a healthy dwelling. There is no cordon drawn about those buildings. Any person who likes, and pays his rent, comes into them.

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In fact they are used as sanatoria: persons are sometimes sent to them from hospitals to recover, because they are known to be healthy places, and in that way, I suppose, the mortality has increased beyond what it otherwise would be; whereas the mortality is only 17 in 1,000, while for London, in the year ending in December last, it was 24·1; and if I go back for several years it is the same. The saving in the general mortality in those dwellings is very great. I only wish to point that out as the way in which the legislature should examine and look into the means of saving public life.

2363. But while all this process of rebuilding (as it would really be) of the fever dens of London was going on, how would you protect the people from the ravages of small-pox?—Certainly not by vaccination. I thought so once, but I do not think so now.

2364. How would you protect them?—I would go on in the same course. We have proved how to do it.

2365. But, in the meantime, how would you protect the people from the ravages of small-pox?—Perhaps you cannot protect them in the meantime, but it so happens that the general mortality appears to be less when there is a small-pox epidemic. I do not see why the small-pox should be alone considered. Small-pox formerly was the horrible and dangerous disease which has been described, but I apprehend that it is not so now in anything like the same degree.

2366. Do you consider that small-pox now is less malignant than it was formerly?—No doubt it is; at any rate the treatment is understood much better by all classes, whether allopaths or homœopaths, or any other paths. We do not treat small-pox as it was formerly treated, and therefore the result is not the same. With reference to the inquiry emanating from the Privy Council, upon which the whole of this legislation has been based, 542 medical men have been questioned by letter, I believe, in this inquiry, out of, I apprehend, 16,000 practitioners, but we are not told whether all the answers received have been printed. Of course those who are inclined to be suspicious may fancy that some have been suppressed; others may say that they are all printed. The fact is, that the opinions are nearly all on one side, but we do not know how those 542, which were taken out of 16,000, were selected. Parliament has over and over again based its legislation upon this inquiry. Over and over again it has been said in the House of Commons that there has been the fullest inquiry.

2367. Mr. Alderman Carter.] Have you any reason to believe that any of those answers have been suppressed?—No, I have no reason to believe so, but I say we have no evidence, one way or the other, whether they were taken at random or how they were selected. They are arranged alphabetically; but I apprehend that the Medical Directory was not taken up and 342 of the A's sent to.

2368. Chairman.] Were they not sent to the most celebrated practitioners all through Europe?—I do not know that they were, or whether they were all selected as good and safe men, but the fact remains that though large numbers of medical men, both English and Foreign, are known to be opposed to the practice of vaccination, none of their opinions are given. I think that if the medical officer did not know that there

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were a great many opinions against vaccination, he ought to have known it; and if he did know it, it is worse. I think it very important that Parliament should not practically delegate its powers to medical officers behind the scenes.

2369. Do you wish to state anything with respect to the working of the Vaccination Act?—I can only speak partly from hearsay and newspaper reports, but I have nevertheless good reason to believe that many births are not registered. I believe that the result of the use of the Registrar General and his officers, as what other people call spies and informers, has been partly to do away with the use of his statistics, which was an unwise course. It may be true or it may not, but I believe that many births are not registered, and in that way you get a spurious death-rate. If you get all the deaths registered, which you must do, and you do not get all the births registered, the death-rate appears to be increased when really it is not increased.

2370. Mr. Alderman Carter.] What is your reason for believing that a number of births are not registered?—Because the people know that if they register they are compelled to vaccinate the child, whereas, among the many poor who have no expectations of property, they do not care to register, thus escaping what they regard as this persecution.

2371. Chairman.] I suppose you know that the death-rate is taken upon the population as it appears?—Yes.

2372. And that would be taken upon the census in each 10 years, would it not?—Still there is the estimated population from time to time.

2373. The population is known accurately at each census, is it not?—Then the returns would be corrected periodically; some people remove their residences and send their children out of the jurisdiction; some refuse to produce their children, and decline to answer questions; they decline to criminate themselves. It is not very easy to prove in the absence of a child that it has not been vaccinated. There is one other means of avoiding the penalties of this Act. I have heard of two cases in my own immediate neighbourhood of women who have ostensibly complied with the Act, but they have at the same time got rid of what they consider its curse, that is to say, they have attended and had their children vaccinated, and immediately afterwards they have wiped or sucked out the poison, and prevented the children from having the disease.

2374. Would not those women have been obliged to take their children back to the vaccine station in a certain number of days?—Yes.

2375. How do they act when they appear with the children?—Of course, if that were done 20 times, the result would be the same, and I suppose that under the Act a certificate of insusceptibility to the vaccine virus would be at length conceded; I only mention that as showing the utter impossibility of compelling people to have their children vaccinated.

2376. You, perhaps, have heard of such cases?—I visited a woman yesterday for the express purpose of getting it from herself; one child she had saved altogether; another had four punctures in the arm, and she thought that she should have to go again, and so she wiped out two of them; those did not rise, and the others did; she thought she would save her child a little; it is thus proved that a child susceptible of vaccination

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may be saved in that way. There was one statement which struck me in the evidence of Dr. Collins, which is contradicted by other medical men, and that is, that the marks on the arm cannot always be detected in persons who have been vaccinated.

2377. Do you speak upon that medically, or as an amateur?—The question is really this: To support a theory medical men say that certain people were not vaccinated, but Insurance Companies ask the question, “Have you been vaccinated?” and the answer, when the person knows that he has been vaccinated, is, “Yes.” Supposing that that person dies of small-pox, and the medical man, to support his own theory probably, says that the person was unvaccinated, though really unable to say whether the fact was so or not, he gives a certificate, “Unvaccinated,” a fraudulent return might be alleged, and the family may thus lose the insurance money. It is a question as to which the medical profession should be careful what they are about, because they may get themselves into trouble as well as other people, by giving certificates insinuating that a false return was made to an insurance office when really they have not the means of knowing whether the person was vaccinated or not.

2378. Mr. Alderman *Carter*.] Do you believe

that vaccination is any protection whatever against small-pox?—No, I do not.

2379. Dr. *Lyon Playfair*.] Did not Dr. Southwood Smith think that all diseases might come from one origin, and that civilisation might extinguish them all?—I never heard him say that; I think epidemics might be extinguished.

2380. But did he not think that there were different forms produced by similar causes, such as want of cleanliness and bad sanitary arrangements?—Very much.

2381. Are you aware that there are very few medical writers in the world who entertain that opinion, and that the chief medical writers now believe that small-pox produces small-pox or scarlet-fever produces scarlet-fever, just as much as a dog produces a puppy, or a rose-tree produces a rose?—I should not pay much attention to that. I do not think that any profession is more easily led astray than the medical profession, and I know a vast number of medical men for whose opinion I would not give a rush.

2382. You have quoted one eminent medical man; may there not be others of equal eminence with totally different views?—There may be, but I do not know them.

Friday, 24th March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. William Edward Forster.

Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, Esq., IN THE CHAIR.

Mr. WILLIAM JOSEPH ADDISON, called in; and Examined.

2383. *Chairman.*] Do you live at No. 19, West Block, Peabody Buildings, Shadwell?—I do.

2384. Had you a child born about the 1st of June last?—I had.

2385. Was the child vaccinated?—Yes; it was vaccinated on the 8th of September 1870.

2386. By whom was it vaccinated?—By Mr. Ross, of High-street, Shadwell.

2387. Was he the public vaccinator?—Yes.

2388. Did you have the child vaccinated by your own wish, or because of a notice which you received from the Registrar?—I had the child vaccinated to obey the law.

2389. What was the effect upon the child?—The effect upon the child after vaccination was that, three days afterwards it broke out in a most fearful rash in the lower part of the child, and that rash continued to increase each day getting worse and worse.

2390. Each day from the third day up to what time?—For eight weeks.

2391. Did the doctors see the child in the meantime?—Yes, it was vaccinated on the 8th, and on the following Thursday the vaccinator saw the child, and he could see then that he had poisoned my child by vaccination.

2392. Did he say anything of the kind?—The reason why I say that is, because he could see that the poison was in the child, and he ridiculed the child's head. He said she was a poor delicate little thing, and she would not make old bones, for he did not like the shape of its head. "You see," he said, "that it is very prominent."

2393. Did he say that the child was sickly when it was vaccinated?—No.

2394. What took place after he saw the child?—After he saw the child my wife complained of its being very ill, and showed him the lower part of the child, how bad it was, and he said it was nothing, it was a mere rash, an eruption of the skin.

2395. Did the vaccination take?—No, it did not take, but he said it had taken very nicely.

2396. But you say that it did not take?—It did not take.

2397. Did it not rise?—It did not rise to a proper height.

2398. Did you afterwards send the child to the hospital?—We did.

2399. How soon after the vaccination?—About 0.37.

the 17th of September, I believe, as near as I can possibly tell.

2400. That is within a fortnight?—Yes; about three days after my wife complained of the illness of the child; he gave my wife a bottle of medicine which I had no faith in, because I thought by the allusion that the vaccinator made, that he intended driving that complaint into the child. I will not be positive of that, but it had that appearance.

2401. Did you give the child the medicine?—We did not; I said that I did not believe the doctor's statement, and that I should take it to the hospital and have its head examined. It was taken to the hospital, and its head was examined by three medical gentlemen, and they said, "Stuff-a-nonsense, the child's head was as right as their own."

2402. To what hospital did you take it?—Rateliff Cross.

2403. Did the doctors there say anything else about it?—No.

2404. Did you say anything about the child being ill from vaccination?—Yes, we made a complaint there, and the house doctor said to my wife, "Is it not better for one in a thousand to die like this than to have the small pox raging about our towns as it has done before?" My wife said, "It is very strange that it should fall upon my child to be the one in a thousand." He said, "I have no sympathy with people running on against vaccination, and I do not want the minds of the people prejudiced against vaccination."

2405. How often did you take the child to the hospital?—We took it to the hospital for three weeks as an out-patient.

2406. Did you take it daily?—Once or twice a week; sometimes twice, and sometimes once.

2407. Did it improve, or did it gradually grow worse?—It got worse, eating into holes, and it got into such a state that each side of its thighs rose up into a fearful lump. I discovered the disease by copying it off the board over the child's cot, and I found it was put in plain words, "hereditary syphilis"; and I discovered by a medical work, that syphilis was venereal disease.

2408. Do you mean that it was written on a board when the child died?—No, when we took the

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the child to the hospital, after being three weeks an out-patient; it was four weeks an in-patient.

2409. And over the child's head there was put "hereditary syphilis"? — Yes, on the board.

2410. Had the doctor told you previously that that was the disease?—No, decidedly not. We went to several doctors, and they would not tell us. We even went to the doctor's that my wife was married from, and he would not satisfy us. At first, when I saw the word "syphilis," I did not understand the word, but I looked in a medical work that I had, and it said "syphilis, or venereal disease." That was plain enough. Then I looked to see what treatment they had for that disease, and I could see by that, that my child was getting the same treatment as was in the work, simply by their giving a blue ointment to rub under the armpits; and that I proved to be mercury by rubbing it on a penny piece. They say that mercury will brighten a penny piece like silver, and it did so.

2411. Did the child afterwards die?—Yes.

2412. How soon after it was admitted as an in-patient did it die?—Four weeks, all but a day.

2413. What was the certificate given as the cause of death?—"Hereditary syphilis," the same as was placed over the cot, but my wife remonstrated with the doctor, and he put down the words, "attributed to vaccination." We wanted it put in plain words, "death caused by vaccination," but he would not do so.

2414. What was the name of the doctor at the hospital who gave the certificate?—It is signed by William Leonard, house doctor.

2415. And you say that the second cause of death which is put in the certificate, was written after your wife remonstrated with the doctor?—Yes.

2416. Did you have an inquest?—Yes; I felt in duty bound to do so, because I knew that such a disease never existed in my family, not even with ourselves.

2417. Where was the inquest held?—At the "George Peabody," on the 10th November 1870.

2418. What was the verdict of the jury?—Poisoned blood.

2419. Have you a copy of the verdict?—Yes (*handing in the same*).

2420. Who was the coroner?—Mr. Humphreys.

2421. Did you obtain a copy of the verdict from the coroner?—Yes.

2422. The verdict of the jury stated, that your child died from the effects of pyæmia, did it not? — Yes, I believe it means poisoned blood.

2423. Up to the period of the child's being vaccinated, had it been perfectly healthy?—Perfectly healthy; sound, pure, and healthy, and free from all imperfections. There was neither scab, blotch, nor mark, visible on the skin, or under the skin. It was perfectly healthy, and remained so up to the time when it was vaccinated.

2424. Do you know at all where the lymph was taken from with which your child was vaccinated?—I was told that it was taken from a lady's child.

2425. Who told you?—Mr. Ross, the doc-

tor; the public vaccinator of St. Paul's, Shadwell.

2426. You do not know for a certainty from what child it was vaccinated?—No.

2427. You do not know whether the parents of the child from whom the lymph was taken were unhealthy?—I do not.

2428. But you, in your own mind, have an impression that if your child had not been vaccinated, it would not have died?—Never; it would not have died of poisoned blood.

2429. Have you yourself been perfectly healthy, and not had any taint of the disease which has been mentioned?—No; God forbid; if such a thing was the case, I should never have had the audacity to give my sanction for an inquest to be held; there never was such a thing in my family.

2430. Did the divisional surgeon of police, Mr. George Baxter Phillips, attend the inquest and give evidence?—Yes, I believe he was there; I was a summoned witness, but I was not called; it was a very unjust inquest.

2431. Was your wife called?—Yes, and the mother or the supposed mother of the child, that my child was vaccinated from. They were called into the room, and the child was examined. My second-born child was called into the room, and minutely examined from head to foot; but finding they could not lay it on to the parents, they thought that they would clear us.

2432. Did Dr. Phillips, the surgeon of the police, hold a *post mortem* examination on the child on your behalf on the previous day?—Yes, and he admitted that vaccination was the cause of the child's death, but not the disease which was put down in the hospital.

2433. Did he say so in giving evidence?—No, that was in my room.

2434. Did you hear him give his evidence before the inquest?—No, they would not allow me in the room, although I was a summoned witness.

2435. Had you been asked to leave the room?—Yes; directly I went to go in at the door, the beadle took hold of me, and said "You must not go inside."

2436. Did they put all the other witnesses out as well as yourself?—Yes; I had six independent witnesses there to prove the healthy condition of that child previous to its vaccination, but not one of them was wanted; it was a summed up affair quickly; they could see it was such a clear case against vaccination, that they would not go on with it in the proper way.

2437. Did you hear any of the evidence given by Mr. Leonard?—No; my wife did, I believe.

2438. Mr. Jacob Bright.] What is your occupation?—A shoemaker.

2439. How many children have you?—I have had three, but two are dead, and one is living.

2440. Has the one which is living been vaccinated?—Yes.

2441. What age is it?—Three years old next July.

2442. And were the two that died both vaccinated?—Yes.

2443. When did this one die, of which you have been speaking?—On the 2nd November 1870.

2444. Then of course the others were vaccinated before you came to the belief that vaccination was likely to injure them?—Yes; but I should

should never have had any of my children vaccinated if it had not been for the law.

2445. In your neighbourhood is there much feeling or agitation upon this subject of vaccination?—There is a great deal of feeling and agitation against vaccination in my neighbourhood, I can answer, I assure you. Since I have made my case known to people, I have heard of hundreds of cases of people suffering from vaccination; not actually dying, but suffering for years afterwards; at the very time that they have had children vaccinated, at that very time in the year those children have broken out with sores.

2446. How long, so far as you know, is it since this opposition to vaccination began in your neighbourhood?—You may depend upon it it has increased more since my case, and it will do so more too. I will take particular notice to prejudice people's minds against it.

2447. Do you know whether it is a common thing for persons to resort to subterfuges; and, in fact, to endeavour in various ways to escape compulsory vaccination?—Yes; and I would do so too.

2448. But you say that it is a common thing for people to endeavour to evade the law?—Yes.

2449. Can you tell us any of the means which are taken to evade the law?—People have removed sometimes, and sometimes given false addresses at the Registry Office, so that they would not be found out, and have received the papers, and have never had them filled up.

2450. Do you know that to be the fact?—I know it to be the fact.

2451. Are you aware whether it is the fact that

people evade registration altogether in order not to get within the power of the law?—That is a fact; and I would do the same.

2452. But do you know it to be the fact?—Yes.

2453. Do you know anybody whoever did it? No; but I have heard so from independent people.

2454. I have in my hand a report of the Vaccination Committee of Mile End Old Town, presented to, and adopted by, the board of guardians, which states that a great many people do take means to escape vaccination; can you confirm that?—I cannot confirm it, but I have heard so; I do not know it a positive fact.

2455. How long did your child live after it was vaccinated?—Eight weeks all but a day.

2456. Was it ill the whole of the time?—It was ill the whole of the time; all breaking out full of holes; and it died at last completely rotten.

2457. Did any other medical man see it except the one who vaccinated it?—Yes; there were three or four medical men at the inquest, and Dr. Pearce was one.

2458. *Chairman.*] And three or four of the hospital doctors?—Decidedly.

2459. *Mr. Jacob Bright.*] At the inquest as well as at the hospital?—Yes.

2460. Do you know whether they were generally agreed as to the fact that this child had been injured by vaccination?—No; I was not allowed in the room. My wife was present. I am confident that vaccination was the sole cause of the death of my child, and no power on earth shall ever shake that conviction off my mind. God alone will prove that.

The Rev. W. HUME-ROTHERY, called in; and Examined.

2461. *Chairman.*] WHERE do you reside?—At Middleton, near Manchester.

2462. For some years you have paid attention to the subject of vaccination, have you not?—I have for the last four years paid considerable attention to this subject. Before that time the vaccination question had never been a question with me, or if I had thought of it at all, I must have thought of it as a custom which I supposed every respectable family would observe. It was the vaccination of my own little son which first drew my attention to the nature and character of vaccination.

2463. Was that about four years ago?—Rather more than four years since.

2464. Before that time, I suppose you had not any particular objection to the process?—Not the slightest; I had never thought of it at all.

2465. Then what took place in the vaccination of your son which led you to view the operation with disfavour?—My wife, who had regarded vaccination as being as necessary for a child as food or clothing, seeing the doctor lance the arm of a healthy babe, and put the vaccine venom into its blood, instinctively said, "This is an unnatural and wrong thing." When I had thought over the matter dispassionately and seriously, I saw that vaccination was a delusion. To wound the arm of a child literally overflowing with health, and to put corruption into its blood to shield it from small-pox, thus to set up a disease by artificial means to protect it against a prospective

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disease which might never occur, I was convinced must be a delusion.

2466. Did any bad symptoms follow the vaccination of your child?—About three months afterwards the little boy had a long series of very large boils, such as I never saw in any other babe. These were attributed to the suppression of a teething eruption; but as the child did not cut a tooth for upwards of six months afterwards, this must have been a mistake; and from what I have since seen of the results of vaccination, I now believe those boils were directly connected with this process.

2467. How long did the boils continue?—I cannot exactly say; five or six weeks.

2468. Did the child suffer in any other way?—Not at all; it was a very strong child.

2469. Had anything led you to suppose that children do not suffer from eruptions of that kind, from boils, whether they are vaccinated or unvaccinated; have you had any medical advice upon the subject?—Yes; we had a medical man, and he ascribed those boils to the suppression of a teething eruption.

2470. Have you anything further to say with respect to that particular case of the vaccination of your own child?—Not of my own little child; but this led me to think about the matter seriously, and I saw that it was a practice utterly indefensible on any Christian or rational ground.

2471. Since that period, have you given particular attention to the subject?—I have.

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2472. Can you now state to the Committee any cases which seem to support the view that you have formed?—I can state a considerable number of cases; some from Middleton, some from Rochdale, others from Smallbridge near Rochdale, some from Barrow-in-Furness, some from Maryport, in Cumberland, my native county, and others from Johnstone, in Scotland, all attested before magistrates. I know some of the cases myself.

2473. Will you first state the cases which you know yourself of your own knowledge?—These are the Middleton cases. This is the statement of Samuel Scholes, silk manufacturer, Middleton: "My daughter was nine months old when vaccinated. Up to that time she had been quite a healthy baby; afterwards she was afflicted with sore eyes, and continued to be so afflicted for many years. There is no such complaint either in my family or my wife's. We afterwards discovered that sore eyes prevailed in the family from which she was vaccinated."

2474. Did he make that declaration to you?—No; this was a declaration before a magistrate.

2475. Do you know Samuel Scholes?—I know him as a neighbour of mine.

2476. Do you know anything with respect to that case?—I know the little girl, and I could swear that he is a perfectly respectable man, and incapable of stating a falsehood.

2477. Have you made any inquiry into that case?—I only had the word of the father and the mother as to the truth of the case, but I could no more doubt it than I could doubt the word of any honourable person with whom I am intimately acquainted.

2478. Mr. *Candlish*.] Have you seen the child?—Yes, I have seen the child.

2479. *Chairman*.] Is the child still suffering?—Not now; the child has recovered, but her eyes are still weak. The child is now, I think, about 12 years of age.

2480. Mr. *Candlish*.] Did you ever see the child when it was ailing?—I never saw the child when it was ailing. The second case is the statement of Samuel Horrox, joiner, Middleton: "My second child, Mary Jane, was quite healthy before vaccination. She was vaccinated when nine months old, and a fortnight after vaccination she was afflicted with an offensive eruption nearly all over her body. She is now three years of age. Since vaccination she has seldom been free from sores and scabs. I regard vaccination as the sole cause of her unhealthiness. My eldest child, over six years of age, has not been vaccinated, and a healthier boy could not be found. My wife, myself, and our families are remarkably healthy." This is attested before a magistrate.

2481. *Chairman*.] What was the complaint which his child suffered from after vaccination?—An eruption which broke out again and again.

2482. Is it stated of what kind the eruption was?—That is not stated; it is stated that scabs and sores came over the child's body. I have seen the child.

2483. Have you seen the eruption?—Yes, I have seen some on the child's body, though it now looks well.

2484. Has the child been seen by any medical man?—I cannot say. This is the statement of Thomas Brooks, silk finisher, Middleton: "My daughter, Emma, now four years of age, was

perfectly healthy before vaccination, but since that, up to the present time, she has never been healthy, and it is my decided conviction that vaccination was the cause of her illness. This is also the conviction of my friends, and likewise that of the parents of the child from whom mine was vaccinated; two of their children, both vaccinated out of one family, having also suffered greatly from vaccination. One of those children is dead, and the other, though living, is in a feeble state. The parents are healthy people, and the rest of their children are quite healthy. This is the case with myself, my wife, and my three other children; they are all perfectly healthy. My child's bowels were seriously relaxed for nine months after vaccination. When the relaxation ceased, foul sores broke out on different parts of the body. She suffered greatly, and was a source of much anxiety to us. She is still suffering, and in all probability must continue to suffer we know not how long." That is attested before a magistrate, Mr. Jackson.

2485. Have you seen that child?—I have seen that child.

2486. Have you seen the sores?—Yes; I have seen the marks of the sores on the child's body at the present time. There is literally a large hole in the child's hand, and the child's foot is so disfigured, that in all likelihood the poor little thing will be a cripple for life.

2487. Do you know what is stated to be the cause of the sores?—Vaccination.

2488. Are they scrofulous sores?—I cannot say.

2489. Do you know whether any medical man has been attending this child?—Yes; a medical man has been attending her, and has given it as his opinion that the child's ailments were owing exclusively to vaccination.

2490. Do you know the name of the medical man?—I do not; but the father, who is a perfectly respectable man, told me this. This is the statement of John Boardman, engraver, Middleton: "I have a sister who was vaccinated when a baby. My family, on all sides, is perfectly healthy. When my sister was 18 months old, cancer began to appear under her chin. When a little over two years old she was operated upon for cancer. Another operation was performed for the same purpose. The doctor inquired if there was any cancer in our family. On being answered in the negative, he next asked if there was cancer in the family of the child from whom my sister had been vaccinated. It was discovered, upon inquiry, that the mother of the former child had a cancer on her thigh, which, up to that time, she had never made known. She subsequently died of cancer. When my sister was 13 years of age, cancer in her left breast (which, in consequence, she entirely lost) made its appearance. She was ultimately cured, and is now a healthy woman." This statement was made before a magistrate.

2491. Do you know this person?—I know this person. This is a very peculiar case. I was at an anti-vaccination meeting and a respectable-looking man rose in the meeting and begged leave to support a resolution. He was unknown to me, and he stated the case which I have just read to the Committee, as a very wonderful instance of the transmissibility of disease by means of vaccination.

2492. Do you know the name of the medical man who attended that case?—No; Mr. Boardman,

man, the person who attested this case, I believe to be a person of irreproachable character.

2493. *Mr. Candlish.*] Under what circumstances did these persons happen to go before the magistrates?—I asked them all to come before a magistrate. This is the form of affidavit: “The above statement was made by John Boardman before me, one of Her Majesty’s justices of the peace for the county of Lancaster, at Middleton, Lancashire, on the 8th day of March, 1871.”

2494. *Chairman.*] Then those are all obtained through your influence?—Through my influence entirely.

2495. *Mr. Candlish.*] Do you mean that they were obtained under your influence or through your agency?—I cannot see the distinction between the one and the other. I simply asked the people if they would state and attest those cases that I might lay them before this Committee.

2496. *Chairman.*] Was that the object you had in obtaining them?—Yes; when the Committee was appointed Mr. Gibbs stated in a periodical which I saw, that cases should be collected and attested before a magistrate or some competent officer, and the cases which I have brought here have all been collected with the distinct understanding that they were to be laid before the Committee. You have in these cases the attested belief of the parents. This is the statement of James Horrox, silk dyer, Middleton: “My child, a boy exceedingly well before vaccination, was never well afterwards. The child’s flesh was rendered remarkably unsound; it rotted on the slightest scratch with a pin; it now and then broke out with scabs and sores. The child died when a year and eight months old. Six other children were vaccinated from the same child as mine. Not one of those survived vaccination.” I may state, before I go further, that I have heard that seven children besides were vaccinated, but this statement of Mr. Horrox is, that there were six.

2497. *Dr. Lyon Playfair.*] What is the exact date of that vaccination?—I cannot tell you, but I should think not more than two years ago.

2498. Will you furnish the date upon which the first child was vaccinated, the names of the other children, the dates upon which they were vaccinated, and the persons by whom they were vaccinated?—I will endeavour to do so.

2499. *Dr. Brewer.*] Were they all vaccinated from the same child?—It is so stated. I will do my best to obtain the information which the Committee ask for. I heard months since of the deaths of these children, all vaccinated at the same time and from the same child.

2500. *Mr. Jacob Bright.*] Where were those children living?—In Middleton.

2501. Did they all die?—I am told they all died.

2502. *Mr. Candlish.*] Do you know the ailment, if any, from which the child from whom they were vaccinated was suffering?—It is said (but I can go no further than that) that the child was syphilitic. This statement is attested before the same magistrate.

2503. *Chairman.*] Do you know anything of the parents?—I do, and better people I do not think I could find. They are religious people, and are, I believe, incapable of falsehood. This is the statement of Ann Reed, widow, Middleton: “My son, John, quite a healthy baby before he was vaccinated, was ever after till he died, when
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he was nearly eight years of age, an indescribable sufferer. His body was literally rotten; he had wounds and issues in various places. The smell from the boy was almost unbearable.” The teeth rotted out of his mouth; his under jaw rotted away entirely. When he died I knelt down and thanked God for having called him away. My husband, myself, and my five other children are all remarkably healthy. The girl from whom my son was vaccinated has never been well since vaccination. She is now about 17 years of age, and has fits. A girl was vaccinated from my son. She is now about 18 years of age, and she has never been healthy since vaccination.” That is attested before a magistrate.

2504. *Mr. Candlish.*] That is a very old case, is it not?—Yes, I think it is.

2505. It must have been 18 years ago if a girl was vaccinated from that child who is now 17 years old?—No; about 16.

2506. *Chairman.*] Do you know anything about that case from your own knowledge?—I only know the mother.

2507. Do you know the doctor?—I do not know the doctor; but no men, and no body of men are proper judges in their own cause. It is the duty of medical men to recommend modes of treatment, but it is the duty of the public to judge of their modes of treatment, and the results. It is not to be supposed that medical men will criminate either themselves or their brother practitioners. This is the statement of Ann, wife of John Farebrother Bottom, of Barrow Fields, Middleton: “Our second child, a boy, was vaccinated when it was four months old. Up to that time he had been perfectly healthy. Three months after vaccination, the arm vaccinated began to break out. The eruption spread upwards, until his head and face were one mass of sores. It continued in that state upwards of 12 months. We often had to walk about with it night and day. From suckling the child I was several times affected in my breast and arm. The child was in such a state that I could rarely move it from arm to arm. Its genital organs have all along been swollen and inflamed. When its teeth came they rotted, and many of them broke away. It is now two years and nine months old; he is much better, but far from healthy. Could I have foreseen the twentieth part of his sufferings I would sooner have gone to prison than have had him vaccinated.”

2508. Do you know the parents of that child?—I do.

2509. Are they, so far as you know, perfectly healthy people?—They are perfectly healthy and respectable persons.

2510. *Dr. Lyon Playfair.*] Was that syphilis?—I believe so. I have seen this child, and it is a sad object.

2511. Do you know whether any medical man has attended that child during its illness?—A medical man has attended it.

2512. Do you know his name?—I am not certain about the name, but I will do my best to ascertain it. She goes on to say, “My elder boy is five years old, he has always been a thoroughly healthy child. There had never been any disease in my family or my husband’s;” and there is the usual declaration before a magistrate.

2513. *Chairman.*] Have you, in your visits to certain places, such as Rochdale and other neighbouring towns, ascertained the opinions
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and feeling of any great number of people with respect to vaccination?—I have.

2514. Are there a large number of people who object to vaccination?—I am certain that there is a very decided majority entirely opposed to vaccination.

2515. Upon what do you ground that opinion?—The general impression is that vaccination is utterly useless as a prophylactic against small-pox.

2516. Mr. *Candlish*.] Will you state the names of the places where, in your judgment, the public opinion of the majority is against vaccination?—I am quite certain that it is against vaccination in the great centres of industry and intelligence in Lancashire.

2517. Including Manchester, of course?—Yes.

2518. And including Liverpool?—I have never been in Liverpool since I took up this question. I have addressed public meetings upon this subject, and I have never seen but two hands held up in favour of vaccination.

2519. Were those meetings held purposely to oppose vaccination?—They were held purposely to oppose vaccination; but they were public meetings.

2520. *Chairman*.] Have you any opinion with reference to the selection of lymph for vaccination; do you think that vaccination might not be injurious if it was properly and carefully performed?—As to the selection of the lymph, I have very decided opinions. In the first place, lymph is rottenness, it is the production of a suppurating sore. Now, to sow rottenness in the blood cannot be the means of producing health and vigour in the body. Again, even a family doctor, let him be ever so well acquainted with his patients, cannot be certain that the healthiest-looking child has no taint of disease in its blood. Further, a public vaccinator must often select vaccinifers from families with whom he is very little acquainted. A child may appear healthy, and its parents may seem to be healthy, and yet there may be, both in the child and in the parents some latent or some positive disease. The cancer case which I have adduced is an instance in point. Further, a public vaccinator will often vaccinate a dozen or more children from the same vaccinifer, the needle or lancet passing from arm to arm between the vaccinifer and the vaccinated throughout the whole batch. In such a case the vaccinifer may be perfectly free from disease; but if there be any taint of disease in any of the other children, that may be communicated first to the vaccinifer and then to the others subsequently vaccinated. Again, I am of opinion, and it seems to me to be inevitable, that the mere transference of matter from one subject to another, though both being healthy, must often generate disease by simple antagonism, where incompatibilities of temperament or bodily habit exist.

2521. Then you do not consider that the selection of lymph is of any importance in vaccination, but you think, that if you vaccinate with lymph taken from a healthy child, it may produce disease?—It may produce disease. No person's health is absolutely perfect, and a latent taint in one may so excite and aggravate a latent taint in another as to cause very dangerous disease; but, of course, lymph from a positively diseased subject might be still worse.

2522. If vaccination is so dangerous in its effects, how do you account for so few children

seeming to suffer from the effects of vaccination?—I am of opinion that vaccination has deteriorated the population in general, both in stature and in stamina. The decrease of stature is proved by the lowering of the standard of height for the army. The deterioration of bodily vigour is a matter of common remark.

2523. Do you, in stating that, mean it to apply both to town and country?—I think both to town and country. I do not think that the average men and women of the present generation can compare with their parents or their grandparents in physique. Further, I hold that vaccination is always injurious. The temporary disease set up is an injury to a child; the lancing of a child's arm is an injury to its skin; the infusion of corruption into its veins is an injury to its blood.

2524. But if the stamina of the population has decreased, how do you account for the fact that the life of the people has decidedly lengthened during the last half century?—I am not aware that that is the case, though many other causes might account for that; but it is a matter of very common remark that young people are not now so strong as they were 60 or 70 years ago.

2525. May not that arise very much from the fact that the habits of a large portion of the people are, perhaps, not so good as it is desirable that they should be; may not that induce disease in children?—Undoubtedly that would induce disease in children; but I think we may affirm *à priori* that if we poison the blood of two or three generations, we must inevitably deteriorate the race.

2526. Are you aware that many of the highest medical authorities deny the possibility of the transmission of disease by vaccination?—I am; but I also know that very high medical authorities are of a contrary opinion. I have read all the literature, both in favour of vaccination and against vaccination, that I could lay my hands on. I have reviewed a considerable number of pamphlets, both in favour of vaccination and in opposition to vaccination. Dr. Alleyne Nicholson, who is a pro-vaccinator, states that vaccination cannot convey disease. Dr. Blanc, also a pro-vaccinator, is certain that it can convey disease.

2527. Dr. *Lyon Playfair*.] Is not Dr. Alleyne Nicholson a lecturer on Natural History, in the city of Edinburgh?—I think he is. I reviewed his pamphlet, and this is the heading of the review: "A Popular Essay on the Principles and Practice of Vaccination"; by Henry Alleyne Nicholson, M.D., D.S.C., M.A., &c. — London: Churchhill and Sons, New Burlington-street. Dr. Alleyne Nicholson (as he has delivered himself in his published pamphlet) is clearly of opinion that vaccination cannot be a channel of disease; and supported by the names of several medical men, he concludes that both theoretical reasoning and direct experiment, prove that vaccination, even from children, constitutionally afflicted with the venereal disease, cannot convey this loathsome distemper to others. So strongly rooted is this persuasion in his mind, that he says (p. 38), "If a case can be made out against vaccination, by all means let the law be repealed." Dr. Blanc, on the other hand, expresses himself as follows (p. 6): "The declared adversaries of vaccination are far less dangerous to its cause than those who, in the presence of the strongest evidence, persist in the denial of the possibility of the transmission of other diseases, and of the actual degeneration of vaccine lymph, and who endeavour, by partial and

and trivial facts, to force upon the public a belief in a perfection that no longer exists." Dr. Nicholson says, that disease cannot be transmitted by means of vaccination. Dr. Blanc, who is also in favour of vaccination, says that the persons who so argue are foes to vaccination. Some medical men are opposed to vaccination altogether, other medical men are in favour of vaccination. One set of medical men say that disease cannot be conveyed by vaccination, another set of medical men say that disease can be conveyed by vaccination.

2528. *Chairman.*] Do you think that vaccination is any protection at all to the person vaccinated?—I do not think it is any protection.

2529. Do you not think that it mitigates the disease when a person is attacked with small-pox?—I do not think it does. We had a small-pox epidemic in our neighbourhood about two years ago, and the vaccinated were quite as liable to small-pox infection as the unvaccinated. Now, I know a family in Middleton who had small-pox some little time ago. All the children of the family were vaccinated but one, a little girl. The doctor said, "I will to-morrow vaccinate that child, and prevent it, if possible, from having small-pox," but on the morrow he said, "I am too late, the child has small-pox." The mother told me only the other day that that child got better through the disease than any of the other children. She went about the whole time, and she only had four pustules on her body.

2530. And the other children you say had been vaccinated?—The other children had been vaccinated.

2531. Did they take the disease?—They all but one had the disease, and the one child who was not vaccinated had it more slightly than any of the others.

2532. Were any of the cases fatal?—None of them were fatal.

2533. Is it not the fact that the returns show that there is a greater number of fatal cases among the unvaccinated than among the vaccinated?—Yes, I know it is so stated.

2534. How do you account for that?—I account for it in this way: successful vaccination is the throwing off of the poison which has been infused into the blood. Now, constitutions capable of thus throwing off the poison are the most likely to resist disease. If they succumb, they succumb but partially, and for the most part they soon recover. As to the unvaccinated, as vaccination has, up to the present time, been a fashionable thing, the unvaccinated are to be looked for chiefly amongst the lowest and most neglected classes of society, amongst those who are exposed to the debilitating influences of filth, poverty, drunkenness, and other evils. When they are attacked with disease, no wonder that they so easily succumb. That is the way in which I account for the fact that the successfully-vaccinated more frequently recover than the unvaccinated.

2535. But if, it were proved that vaccination was a real protection to the people, would you still be of opinion that the compulsory powers of the Vaccination Act should be done away with?—I am quite of that opinion. If the majority believe vaccination to be a prophylactic, they can protect themselves by practising vaccination, and leave the minority to their own risks.

2536. But if the health of the majority is endangered by the minority being left to them-

selves, would you still hold that opinion?—If the majority, who say that vaccination is protective against disease, admit that they would be endangered by the unvaccinated minority, they concede the ground which is claimed by the anti-vaccinators, that vaccination is useless.

2537. Is it your opinion that the compulsory powers should be done away with?—Entirely done away with.

2538. Do you think that there should be no penalty at all for non-vaccination?—I think that there should be no penalty whatever; and this is my reason for such opinion: compulsion is either a good thing or a bad thing. If it be good, it ought to be carried out to the uttermost, and a man should be fined and imprisoned until he submits, or dies. If compulsion be bad (and I am of opinion that it is utterly untenable in this case), then I am of opinion that it is bad in every part as well as in its entirety. That being the case, there should be no compulsion whatever in respect to vaccination. Consequently, the compulsory law ought to be entirely abrogated.

2539. Do you think that the view taken by the Honourable Member for Sunderland, that one penalty should be retained, would be objected to by the general public?—I am certain it would. It is a view based upon no principle whatever. I think the public have too clear a sense of justice and of consistency to be satisfied with even a single penalty in such a case.

2540. Have you any other remark which you wish to make in addition to what you have stated?—I should like to state the grounds of my objections to vaccination; I object to vaccination, in the first place, because it is an utterly unprincipled practice. There is no principle to be found in nature, human nature, or Revelation, which underlies or justifies the practice of vaccination. By principle, I mean a leading truth, an eternal law of life. There is no such truth, there is no such law, ultimating or illustrating itself in vaccination. Vaccination is an unprincipled practice; but whilst no principle underlies vaccination, two assumptions underlie it. The first, that disease artificially created can prevent disease; a less prevent a greater of the same kind; which is tantamount to saying that disorder is the proper preventive for disorder. If this were true (we can, happily, see that it is untrue), it would justify every description of immorality within certain limits; nay, it would necessitate the practice of immorality to prevent immorality. The other assumption underlying vaccination is, that God has done His work so badly, and has made His children so imperfectly, that unless surgeons scarify their arms, and put vaccine poison into their blood, they will be dangerous to themselves, and dangerous to society. This is my primary objection to vaccination. I have other objections to vaccination. Vaccination diverts attention from the real causes of disease; whilst vaccination professes to shield persons from the small-pox, it leaves untouched the causes producing small-pox.

2541. What are the causes to which you refer?—Bad sanitary conditions and immoral practices.

2542. Do you think that with an improved sanitary state you might eventually stamp out small-pox altogether?—I think so; small-pox is undoubtedly an effect which must have a cause. Purity cannot be the cause of small-pox; impurity

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rity must be the cause of small-pox. If you could by means of vaccination suppress this eruptive fever, you would, by imprisoning the impurity in the blood, do more harm to the patient than small pox does, which is a safety-valve for the rejection of impurities. But apart from any medical aspect of the question, I think that there are grave objections to compulsory vaccination. First, vaccination as now practised is a fraud. There is no such thing as vaccination; what passes under the name of vaccination is a bastard form of the inoculation which has been rendered penal by law. Now, to establish and enforce by Act of Parliament a fraud, can have none but a demoralising influence both upon the medical profession and upon the public at large. Further, to legalise this medical theory of vaccination is to grant to one branch of the medical profession an unequal privilege, which is a political injustice to every other branch. Moreover, it is a feature of that medical despotism which is incompatible with civil liberty, and against which many of the best minds of the day are warring and intend to war, until it be overthrown. Further, compulsory vaccination as now practised, oppresses the consciences of thousands and thousands of respectable parents. Parents too poor to pay a fine, and unwilling to go to prison, and leave their children to the charity of their neighbours, submit to vaccination, to the wounding of their own consciences. A law which violates conscience is, I submit, an unchristian law. Again, compulsion itself is a bad thing; the State has no right to compel a man to do good even to himself; all that the State has a right to do is, to hinder a man from injuring his neighbour.

2543. Supposing that vaccination was proved to be a real protection, and a man left his child unvaccinated, and allowed it to go among other children, would not that man be doing an injury to his neighbour?—I think not; if vaccination were a real protective, the neighbour could protect himself, and leave the man who conscientiously objected to vaccination to take his own course.

2544. But supposing that vaccination was a real protection, and that the vaccinated children were not liable to small-pox, while the unvaccinated children were liable to small-pox, would you not admit that that man would be doing, not only an injury to his own child by leaving it unvaccinated, but a probable injury to his neighbour?—But you are supposing a case which is untenable. He could not in that case injure his vaccinated neighbour.

2545. Supposing it was the case, would you admit that you have the right of taking means to compel the parents to have their children vaccinated?—I would not; the assumption that the State has a right to force upon the people what it thinks is for their good, is the very assumption which has been used to uphold every kind of Papal and Protestant persecution. If the State had a right to enforce vaccination, the State would have a right to enforce teetotalism, or any other opinion.

2546. Mr. *Candlish*.] Or education?—Or education.

2547. Do you object to compulsory education?—Entirely.

2548. *Chairman*.] Do you not think that the State has a right to compel the education of children?—I do not. I think that the State has no such right, but that it is the duty of the parent

to educate his own child; and if the State interferes at all, it should only interfere by compelling the parent to discharge his duty to his child.

2549. If the parent neglects his duty, the only way in which the State can interfere is to compel the parent to send his child to school, is it not?—No; many of the children can have education in their own homes.

2550. Supposing that children are running in the gutter, what means would you take to compel those children to be educated?—If a parent flagrantly neglects the education of his children, I think that the State should interfere and punish the parent just the same as if he neglects the feeding or clothing of his children; but I would lay the burden upon the parent; I would not leave the whole country to discharge the duties of the parent.

2551. Dr. *Lyon Playfair*.] What did you exactly mean by saying that vaccination is a fraud as at present practised?—Vaccination, in Jenner's definition of it, is the taking of lymph directly from the cow inoculated with grease from the heels of the horse. At the present time you cannot get lymph from the cow, and therefore what is called vaccination is not vaccination.

2552. Are you not aware that Jenner himself practised taking lymph from the arms of human beings, and found that that had exactly the same effect as if it were taken from the cow direct?—I am not aware of that; but I know, from Jenner's own works, that he states that lymph is of no avail whatever unless it be taken directly from the cow.

2553. Are you not aware that Jenner himself practised inoculation from child to child?—I am not.

2554. Are you not aware that experiments have been made in most of the countries of Europe, within the last few years, in taking matter direct from the cow and taking it from the human arm, and that one is found to be just as efficient as the other?—I am not aware of that; but even if it were the case, the taking of the matter from the arm of one child, and transferring it to the arm of another child, would not be vaccination in any proper sense of the term.

2555. What did you mean when you said that it was not vaccination, but a bastard inoculation; do you mean that it is inoculation of small-pox?—It is not genuine inoculation; it is not the taking of matter from the natural small-pox, but it is the taking of matter from an artificial pock.

2556. And if you found that by large experience there is no degeneration in such cases, would you still call it bastard inoculation?—I should.

2557. I want to find out whether your terms are scientific terms or popular terms; what do you understand by inoculation as differing from vaccination?—Inoculation was practised at one time before vaccination, and by inoculation I mean the transference of matter from the natural small-pox to a person free from small-pox.

2558. Do you mean that vaccination in the ordinary form is actually the same as if lymph was taken from a person diseased with small-pox?—No; it is a bastard kind of inoculation, as I said; the matter being taken from a bastard or artificial form of small-pox.

2559. Do not vaccinators believe that vaccination produces an extremely modified form of small-pox having no dangerous character, so that your

your term and the term of the medical men are precisely the same with different words?—Yes.

2560. When you used the expression "Lymph is rottenness," did you use that in a popular sense or a scientific sense; do you know that lymph is rottenness?—I know it is the product of a sore.

2561. Are you speaking of it with scientific knowledge or with popular knowledge?—With scientific and popular knowledge.

2562. It is well-known that rotten animal fluids, when put into sugar, produce what is called by some the putrid fermentation, or by others the butyric acid fermentation; does lymph act like rotten fluid in this way?—I cannot say.

2563. Then you merely used it in a popular sense?—In a popular sense.

2564. Supposing that a believer in vaccination did not call it rottenness, but called it a ferment (just like yeast), would you not say that, from the character of the changes which took place in the body, it could be characterised as a ferment quite as appropriately as calling it rottenness?—I do not know that it could. I think that if it were a ferment it would produce its results all over the body.

2565. Supposing, for instance that you are going to ferment the juice of the turnip, the ferment will only act upon the sugar, and the juice will not touch the other ingredients; may there not be something in the blood upon which this ferment acts and leaves the other things untouched, exactly as in the case of the vegetable juice, where it only acts upon the sugar, and is not that the view which is entertained of the action of the vaccine lymph by those who have studied the matter?—I know that some entertain that view. Dr. Alleyne Nicholson entertains that view. But there is no proof of it.

2566. With regard to Dr. Alleyne Nicholson, whom you have used as an authority, he is a distinguished man of science, and he lectures on zoology; but is he a practising medical man at all?—I do not know.

2567. You say that vaccination has had a very injurious effect upon the population, and I think you said that it decreased the bodily vigour, that it diminished the stature of the population, and that soldiers could not be obtained of the same height as formerly; what are your reasons for coming to such large conclusions?—I have the opinion of medical men upon the subject, and it is also a widely-prevailing opinion.

2568. Taking the instance (as to which you are quite right) that the stature of soldiers has been decreased; may not that arise from the large competition for labour, and from higher prices being paid for labour than are paid for service in the army?—I do not know.

2569. Are you aware there is any difficulty in the police force, for instance, where the men receive fair wages, in getting proper-sized men?—I cannot answer that question.

2570. Are you aware that so far as we have any evidence, the stature of population is getting constantly larger; are you aware, for instance, that all the ancient suits of armour, which you may find in any collection, are unsuitable to be worn by men of the present day, being too small for them?—That does not accord with my reading. Mr. Ferguson, of Carlisle, has written a book, I think, entitled "Traces of the Northmen"; and he shows that the inhabitants of Westmoreland and Cumberland were at one time very

much larger in stature than they are now. He proves this by the bones found in the barrows or graves of the old Vikings.

2571. Perhaps those old men were specially doughty warriors; but are you not aware that in modern times the rate of mortality is much less than it was a century or two centuries ago?—I cannot speak to that.

2572. I find from McCulloch's "Descriptive and Statistical Account of the British Empire" (the data being furnished to him by Dr. Farr, the Registrar General) that, from 1771 to 1780, 500 persons died out of 10,000 living; that from 1801 to 1810, 292 per 10,000 living died; that from 1831 to 1835, 320 per 10,000 living died; and that from 1840 to 1854, 248 per 10,000 living died. Does not that show that the rate of mortality has decreased to the extent of nearly one-half?—I have not studied those figures, and therefore I cannot speak to them.

2573. But you stated the very large conclusion that vaccination had ruined the health of the population; and that their bodily vigour stature had been reduced by diseases produced by vaccination; would those figures support such a statement?—I have not studied the figures, and I cannot say that they would support such a statement. I said injured, not ruined.

2574. Must we take your views, then, as being popular convictions formed by yourself from general considerations, but without any statistical investigation into the case?—I have seen statistical statements in medical works confirmatory of my own views. I have based my opinion upon general observation on the subject, strengthened by the opinions of medical writers.

2575. To whose opinion do you refer?—I have a large array of opinions.

2576. You said that you considered vaccination an unprincipled practice, did you not?—Yes.

2577. Would you consider the brewing of beer an unprincipled practice, because that is a process of fermentation?—I should not; but you may do with a dead body what you may not do with a living body.

2578. But is not yeast living?—I think not, in the same sense as the human body lives.

2579. Is it not a vegetable growing, and therefore living in exactly the same sense as a human body?—That is not my opinion. The human body has a soul, and the other has no soul.

2580. It is quite true that there is that difference, but they both have life; you gave some instances of eruption produced after vaccination, or what medical men called eczema; are you not aware that eczema was exceedingly common among children long before vaccination was discovered at all?—I am not aware of that.

2581. If it be the case that medical writers long before vaccination, described eczema as the most common malady of children of from three months and upwards; would you consider that eczema coming after vaccination was necessarily the consequence of vaccination?—It cannot be proved that there is any direct connection between the one and the other. It is a theory; but it is also only a theory, that vaccination has diminished small-pox; and what I object to is that Parliament should found a compulsory law upon a mere theory.

2582. But we are coming to facts; by what proofs do you connect the eczema, or those other diseases that come, sometimes soon, sometimes

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months after vaccination, with vaccination itself?—I am not sure that eczema does.

2583. I thought you gave us those cases to prove that they did come?—I have not stated that those eruptions were eczema.

2584. But what proof is there that those diseases, some of which come immediately after vaccination, some half a year afterwards, and some a year afterwards, are necessarily consequences of vaccination; if, for instance, you baptized a child, and one week after the baptism of the child eczema came on, you would not connect it with the baptism, I presume?—Certainly not. Baptism puts no corruption into the child's blood.

2585. Have you any more reasonable grounds than those of *post hoc ergo propter hoc* for connecting the eczema with the vaccination?—It is reasonable to expect disease as the product of corruption, and further when you find that several children vaccinated from one child are all afflicted with the same disease, I think you may safely infer that that disease is the result of vaccination.

2586. I quite agree that if that case of syphilis stands examination, you have given us a most powerful case; but supposing that I could produce to you 10 children who received eczema within a week after they had been baptized, and who had not been vaccinated at all, would you say that the baptism and the eczema had any connection?—Certainly not.

2587. Supposing that that occurs constantly, may not that eczema and those other diseases which come after vaccination be equally connected with it?—But they do not come constantly.

2588. They do not come constantly after baptism, but they are frequently found after baptism; would there be any necessary connection between the two?—There could be no possible connection.

2589. Mr. W. H. Smith.] You stated, did you not, that there is a very great majority in Lancashire against vaccination?—That I am quite certain of.

2590. Upon what facts do you found your opinion?—I have addressed public meetings in different places, and I know other gentlemen who have done the same, and at none of those public meetings have I found any feeling, to speak of, in favour of vaccination. I have only seen two hands held up in favour of it, and one of those persons, I know, was opposed to compulsory vaccination.

2591. Are you of opinion that a meeting called by the Anti-Vaccination League, and addressed by members of that body, simply because it does not decide against the Anti-Vaccination League, correctly represents the feeling of an entire community so large as that of the whole of Lancashire?—That in itself certainly would not represent the entire feeling, but I have gone amongst the people a great deal. I am pretty intimately acquainted with a great deal of the feeling in our large towns, and my decided impression is that the vaccination law is regarded as an unchristian, inhuman, and tyrannical law.

2592. I have no doubt that that is your impression, but what are the facts upon which you have founded your impression?—I have conversed a great deal upon the subject, and my decided opinion is that the generality of people are opposed to compulsory vaccination.

2593. But is it not the fact that a great proportion of the children in Lancashire are vaccinated?—I know many are not.

2594. Do you speak of the better educated classes, or of the whole people?—Generally speaking, I mean the intelligent working classes of Lancashire.

2595. Do you affirm that, as regards those persons, the greater number are not vaccinated?—Many of the children are vaccinated, though many are not vaccinated; and many are vaccinated under compulsion; but I was speaking as to the feeling which prevails in those great centres of population and industry in respect to the vaccination law.

2596. Then you found your opinion entirely upon your own personal observation, as to the condition of the whole of Lancashire upon this point upon the fact that you have attended some meetings?—Yes, and had communication with a considerable number of persons in different parts of the county.

2597. Do you think that that justifies you in speaking of the opinion of the whole county of Lancashire?—I think so, of the general feeling in the county.

2598. Sir Smith Child.] Can you mention the towns where you have attended the meetings to which you have alluded?—I have attended meetings in Rochdale; I have attended meetings in Smallbridge; I have addressed meetings in Middleton and Oldham.

2599. Are those all the towns that you remember?—Those are all where I have myself addressed meetings.

2600. I presume that those meetings were specially called for the expression of anti-vaccination opinion?—They were.

2601. Mr. Holt.] Let me recall to your mind a particular case of which you spoke just now, with regard to a number of children, all of whom suffered from small-pox after vaccination, while another child who was unvaccinated had a very slight attack of small-pox; can you state how long those children had been vaccinated before the attack of small-pox?—I cannot possibly tell you. I only heard of the case the other day, and I went immediately afterwards to the house.

2602. Do you know that it was immediately consequent upon vaccination?—No, I do not.

2603. You have stated the opinions of medical men, some of whom are in favour of vaccination and some of whom are opposed to the theory that it is a prophylactic; can you give the names of those who are opposed to vaccination?—There are several. In our own country Dr. Garth Wilkinson is opposed to vaccination. Dr. Pearce is opposed to vaccination, and Dr. Collins is opposed to vaccination. I cannot go through the list from memory, but in the "Cosmopolitan" of the 16th of February 1871, a list of those medical men will be found.

2604. Mr. Taylor.] Your attention was first attracted to vaccination some four years ago I believe?—It was.

2605. Since that time you have examined a number of cases with a view to fortifying your objection to it, have you not?—After I saw that vaccination was a delusion, I used every available means to inform myself upon the subject.

2606. Would it not have been a more natural course of thought, first to discover by facts that it was a delusion?—I think not; I think if you get to principle then you are standing upon solid ground.

ground. Now I take my stand upon this eternal principle, that you must do good to get good, since it is only from good that good can flow; and conversely that you must never do evil that good may come.

2607. In fact, as you expressed it, that to wound a healthy arm for the sake of acting as a prophylactic against small-pox, was in itself a wrong; is that your view?—I think that it is a physical crime; it is an outrage upon the first principles of physiology. Every physiologist knows that there are certain prescribed channels for admission into the system of whatever substances are requisite for the sustenance and renewal of the body; the digestive organs, the skin, and the lungs, subserve this office by their respective processes of nutrition, absorption, and inhalation. These organs exercise a careful scrutiny and discrimination over all substances seeking entry into the body; and before introducing them into the blood it is the office and prerogative of those organs to reject whatever is injurious, and to accept only what is beneficial. Now to lance the arm of a child or adult, and introduce anything directly into the blood, is to set aside those functions and to deprive the bodily organism of its right of free choice and selection of such matters as are requisite for the well-being of the body. I submit that a medical theory which violates the first principles of physiology is self-condemned, and can be productive of none but disastrous results.

2608. It is, therefore, upon general principles, of what you consider physiology, that you condemn the practice; is that so?—I condemn the practice, firstly, because it is an outrage upon physiology; because it is opposed to the true principle, that you must do good to get good, and because of its disastrous results; and further, because I think that the State has no right whatever to legislate upon any medical theory, especially as the very best medical men will tell you that they have no principle whatever to guide them; but that their practice is entirely empirical. I have in the "*Lancet*," upon the table before me, a report of a lecture delivered by Dr. Samuel Wilks to the students of Guy's Hospital, in which he affirms that medical men have no principle whatever to guide them, and that their practice is entirely empirical. This being the case, it is surely folly to found compulsory laws upon any medical theory.

2609. No facts then, as I understand, would overthrow your theory; supposing that the vaccinators were correct in their theory, and that since the introduction of vaccination, on account of vaccination the mortality from small-pox has immensely decreased; would that in any degree modify your opinion against vaccination as laid down upon what I may call this abstract principle?—I do not quite understand the question.

2610. I understand you lay down a general principle, that to introduce one disease, which you call vaccinia, for the sake of preventing another, is in itself a wrong and an immorality; therefore, supposing that the advocates of vaccination are true in their principles and their facts; and supposing that vaccination has immensely diminished the deaths from small-pox, that would not affect your abstract principle of the impropriety and immorality of vaccination?—I have read a great number of pamphlets in favour of vaccination, and, as far as I can find out, medical

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men support vaccination solely by statistical arguments. Now I submit that no statistics can prove that the vaccinated who have not caught small-pox would have had small-pox if they had remained unvaccinated. Next, I find in the "*Lancet*," of 21st January 1871, this admission, that four-fifths of the small-pox cases which have recently occurred have been amongst the vaccinated. Now, Mr. George Gibbs has found from the Registrar General's returns that only 65.5 per cent., or not quite two-thirds, of the population of England are vaccinated, yet these two-thirds furnish four-fifths of the small-pox cases, a clear proof, as far as figures can prove it, that the vaccinated are twice as liable to small-pox as the unvaccinated. But principles are prior to figures, and independent of figures; figures can be applied to support either truth or untruth, but they never transmute the one into the other. All the statistical tables in the universe cannot justify the practice of outraging nature by cutting the skin and putting corruption into the blood. If, therefore, I were a pro-vaccinator, seeing that vaccination was based upon an eternal principle, I would fling all the figures that you could heap together to the winds, since figures can never invalidate and nullify an eternal law.

2611. Therefore, I understand that the principle upon which you are opposed to vaccination being, as you say, anterior and superior to all statistics and figures, whatever those figures might prove, your opinion against vaccination would remain precisely as it is now?—Precisely the same. True statistics will never be found to oppose true principle.

2612. And the same of course applies to your opinion in reference to the details of vaccination; you believe that vaccination is calculated to produce cancer and syphilis in certain cases, do you not?—I do.

2613. And you believe that, entirely irrespectively, no doubt, of facts, as to whether it has done so or not?—I believe that the eternal law, that a man reaps as he sows, is abundantly proved by the results of vaccination.

2614. The fact, therefore, if it were a fact, of the assertion of many hundreds of the first medical men in the world, that syphilis and cancer are not producible through the means of vaccine lymph, would produce no effect upon your mind?—Not the slightest. I should say that in this case medical men are disqualified to judge, because, if they are not pecuniarily interested, they are interested as regards their own professional reputation.

2615. You held a public meeting at Oldham, did you not?—I did.

2616. Did you hold more than one?—Two.

2617. How many were present?—I should say that fully 600 were present the first time; the second time there were not so many.

2618. What is the population of Oldham?—About 80,000.

2619. Is it not rather a rash presumption, because there was no opposition at those two meetings specially called against vaccination, to believe the population of Oldham to be against vaccination?—I do not found my opinion solely upon those meetings, but I have conversed with a great many persons upon the subject. I should be very sorry to generalise upon such a basis as those meetings only.

2620. Mr. *Jacob Bright*.] I suppose that if the advantages of vaccination were clear and indisputable,

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putable, you would not think that much compulsion would be necessary to induce people to adopt it?—I am glad that you have asked me that question. Compulsion is detrimental to the interests of whatever is enforced. The fact that a thing requires to be enforced is a presumption that it is worthless, and is sure, I think, to create and foster prejudice against it. If I were as much in favour of vaccination as I am opposed to it, if I thought it as great a blessing as I believe it to be a curse, I would deprecate all compulsion as the worst possible mode of recommending it to the public. Further, I think that a compulsory law which interferes between parent and child is highly objectionable. It lessens the sense of parental responsibility and relaxes the tie between parent and child.

2621. Then, seeing that the advantage of vaccination is a much-disputed question, and that, as I believe, there are very strong facts upon both sides, you would hold it to be a very unwise thing to make it compulsory, would you not?—Exceedingly unwise, and utterly indefensible on any sound principle whatever.

2622. Does it appear to you that the fact that vaccination is compulsory, and that men are fined and sent to prison because they do not vaccinate their children, is extending the opposition to the Acts more than that opposition would extend or exist if compulsion was not employed?—I cannot answer that question positively, but it does appear so to me.

2623. You stated a short time ago that you could produce a list of medical men who are opposed to vaccination; have you that list?—I have.

2624. Is it a short list or a long one?—It is a pretty long one.

2625. Are those all qualified practitioners?—I cannot answer for that.

2626. You stated, also, that medical men have an interest in this matter, not only a pecuniary interest, but that sort of interest which men have in maintaining a thing to which they have committed themselves; but with regard to their pecuniary interest, is that a large interest?—I certainly would not advance that at all. I said that if not pecuniarily interested they were interested professionally.

2627. But with regard to the pecuniary question, I speak of it now simply because I have heard it said that vaccination is very badly performed because medical men are not sufficiently paid; do you happen to know how they are paid for this work?—I do not.

2628. All those cases of injury from vaccination which you produced, I think, were from Middleton?—All the cases which I was allowed to read were from there.

2629. You live at Middleton, I think?—I live at Middleton.

2630. It struck me as a little curious that that remarkable case that you adduced, of those six or seven children, having occurred at Middleton, and you living at Middleton, you did not take especial care before coming here to get all the dates and the most exact particulars with regard to that family?—The fact is, that many persons are unwilling to come forward and state their cases; they are afraid of incurring displeasure. Now, I visited two families where children had been killed by vaccination, and I could not get them to state the cases, because they were afraid of getting into some unpleasantness.

2631. Were those six children whom you have mentioned all vaccinated at one time, and from the same child?—Yes; so it is stated; and I will do my utmost to get the names of those children, and full information as to the cases.

2632. You said that you had a good many other cases from Rochdale and Smallbridge; but the Committee thought it not wise to receive them as evidence, you saying that you did not know them yourself; will you tell me how many cases you proposed to give from Rochdale, and how many from Smallbridge?—I have eight cases from Rochdale, all attested before the mayor, Mr. George L. Ashworth. These are all cases of death.

2633. And how many are there from Smallbridge?—I think that there are 12.

2634. I will take the case of Smallbridge, because Smallbridge is a village in the neighbourhood of Rochdale, I believe, with a population, of course, very much less than Rochdale; do you know the population of Smallbridge?—I do not.

2635. It may be, probably, a few thousands; how did you happen to get those cases from Smallbridge?—I wrote to the secretary of the Anti-Vaccination League, and I said, "Get me some cases of death and injury from vaccination, and get them attested before a magistrate, and they shall be laid before the Vaccination Committee;" and one of the persons who brought them said, "Now, anybody, if he had time, could find at least 50 cases of injury and death in his own neighbourhood, in any locality."

2636. Are you a member of what is called the Anti-Vaccination League?—I am.

2637. Will you tell me what is the qualification for membership of that lodge?—I do not know any qualification, except that most persons, I think, contribute to its funds.

2638. Where are the head-quarters of that league?—I think in London, but I am not sure. We have an independent branch in Middleton, and there is another independent branch in Rochdale, and another in Smallbridge.

2639. Do you know at all what number of members there are throughout the country of the Anti-Vaccination League?—No.

2640. Is it to be understood that all the members of that league refuse to obey the law, and refuse to have their children vaccinated?—I think that every member of the league would refuse to have his children vaccinated.

2641. From what you have said as to the wide-spread opposition to this law, I should suppose that there must be a very great number of persons who do evade the law in some way or other?—I believe so. I know that a good many persons do evade the law.

2642. Do you know by what means they evade the law?—They refuse to have their children registered at birth.

2643. Do you know of any family in which that has been done?—I do, in Rochdale.

2644. Are there any other means taken to evade this law?—I am not privy to any. A friend of mine was so persecuted by the magistrates, that he had to remove from his neighbourhood in order to get rid of those prosecutions or persecutions.

2645. Do you know many cases of men who have been fined more than once because they would not have their children vaccinated?—Not personally, but I know of them from report.

2646. Do

2646. Do you know of any cases where men have been imprisoned?—Not personally, but I do from report.

2647. You are aware, of course, that anybody can escape vaccination by paying fines?—I am aware of that.

2648. It appears, does it not, that the law is quite incapable of compelling a child to be vaccinated?—I think so; it simply fines the parent again and again, or imprisons him if he cannot pay the fine.

2649. But it cannot touch the child, can it?—I think it cannot touch the child.

2650. That is to say, there need not be a single child vaccinated if the people were all opposed to vaccination, and could and would pay the fines?—Yes.

2651. If the law were made more stringent, and if they could actually take the child from the parents and have it vaccinated, do you not think it would work in this country?—I am certain that it would not work. I am positive that those magistrates who inflict the heaviest penalty for non-compliance with this law are regarded not as justices, but as disturbers of the peace, and my decided impression is that if the vaccination law be enforced much longer it will seriously endanger the peace of the country.

2652. Then you think that the law is already so stringent that it would be a very impolitic thing to make it more stringent?—Most impolitic. I do not believe that any British Legislature durst do it.

2653. Mr. Alderman Carter.] Did I rightly understand you to say that the people in Lancashire were opposed to vaccination?—I think the people generally are. I think that the best-read and most intelligent people are opposed to it, and I believe that many who would have their own children vaccinated are utterly opposed to compulsory vaccination.

2654. But it was in reference to the majority of people that I asked your opinion. I understood you to say in answer, I think, to my honourable friend the Member for Leicester, that you did not place much reliance upon statistics?—I do not.

2655. Then would you place any reliance whatever on the statistics which you get in reference to those meetings which you attended as to the general opinion or feeling of the people?—I should be very sorry to generalise upon so narrow a basis.

2656. Then you do not form your opinion of the general feeling in Lancashire from the fact of those meetings being well attended?—Not exclusively. Nothing of the kind.

2657. But generally do you do so?—Not generally either, from that alone.

2658. What is the population of Rochdale?—I think 40,000.

2659. How many had you out of that population of 40,000 at your meeting?—I cannot say, but the meeting was crowded. I have addressed more meetings than one in Rochdale, but the first meeting which I addressed was quite crowded. The meeting in Oldham contained about 600.

2660. Did I correctly understand you to say that the general health and stature of the people of Lancashire were deteriorated in consequence of vaccination?—I did not allude to Lancashire only. It is a medical opinion which I have seen stated, that wherever vaccination has been practised, it has deteriorated the people in stature and in *physique*.

tised, it has deteriorated the people in stature and in *physique*.

2661. You have, I am sure, a knowledge of the people of Lancashire; in all those large manufacturing towns, do you think that the health and general appearance of the people is worse than it was 30 years since?—I did not know them 30 years ago, but they are by no means robust people.

2662. Are they at all robust people who work in the cotton factories of Lancashire?—Certainly not, rather the reverse.

2663. Do you know the people of Saddleworth, and of all those hill rides on the eastern side of the backbone, and on the Yorkshire side of the backbone of England?—I did know them some years ago, but I have not had any acquaintance with them for several years.

2664. Do you know them to be a very different class of people in general health and stature from the people who work in the factories of Manchester?—I do.

2665. Do you know that between the two classes of people there is no comparison whatever?—There is no comparison whatever between them.

2666. Do you know that the people living on those hill sides are not vaccinated?—No, I do not know anything of the kind.

2667. Is it not a fact that vaccination is as strictly carried out on those hill sides, where the people are so big and burly and healthy as it is in Manchester among the factory hands and other operatives?—I have not the least doubt of it; so it is in Cumberland and Westmoreland; and yet if we are to be guided in the least by Mr. Fergusson's book, the people there have decreased in stature.

2668-69. You said in answer to my honourable friend the Member for Manchester, that two children were killed by vaccination; do you state that on your own authority?—I have stated that many more than two were killed.

2670. I know you have stated that, but do you, in reference to those two cases that you were alluding to there, know of your own authority that they were killed by vaccination?—I do not know it of my own authority, only on the authority of the parents.

2671. Then was it a mere report?—Yes, the report of the parents.

2672. You stated, did you not, that the feeling in opposition to vaccination is very strong in Lancashire, and in some other places?—I think so.

2673. You know very well that the guardians are the parties to put the Vaccination Act into force?—Yes, and they do so.

2674. Do you know a single case, either in Lancashire or in any other part of the country, where the feeling is as you say so strong, where a guardian has been elected on the ground that he would oppose the operation of the vaccination laws?—There is one gentleman in Rochdale who was elected solely because he was opposed to vaccination.

2675. Did he go to the constituency on that cry alone?—On that very cry; I believe that there were two, but I cannot state positively.

2676. If the feeling was as strong as you say it is would it not operate in that way, and would not guardians be elected with a view of opposing the operation of the Act?—Yes; at Smallbridge the anti-vaccinators are determined if possible to

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oust the present guardians and to elect guardians who are anti-vaccinators.

2677. I think I understood you to say that it was morally wrong to introduce poison into the system by vaccination?—I think it is a physical crime.

2678. I understood you to say that it was morally wrong to introduce poison by a surgical operation?—I think it is physically wrong and morally wrong too; it is doing evil that good may come.

2679. Is it morally wrong to introduce poison as a medicine with a view to doing good?—The cases are not parallel; no person would give poison to a healthy person. Further, I myself am utterly opposed to the allopathic medical practice; I think it is wrong to give poison.

2680. Then you believe that in any case it would be wrong to give poison medicinally, with a view to a good result being supposed to follow?—I should like to know exactly your meaning.

2681. What I want to get at is this: you say it is morally wrong to introduce poison by a surgical operation; is it morally wrong to introduce poison medicinally, and if so, where is the moral wrong in one case that does not exist in the other?—In the one case you put the poison into the stomach, and the digestive organs may separate what is injurious and accept only what is beneficial. They may not allow that to enter the blood which would injure it. But in the other case you lance the arm of the child, and you put the poison directly into the blood, which, I say, is a physical crime.

2682. Is not strychnine regularly given, even by homœopathic practitioners?—Yes.

2683. Then is it morally wrong to introduce it into the system?—Strychnine is not given as a poison; homœopathy never gives a poison. The substance is so attenuated and so diluted that it becomes innocuous; besides, there is no parallel between the two cases.

2684. You are not a doctor, I believe?—No, I am not.

2685. Then you are not speaking of your own knowledge as to that, I presume?—I am. I have studied the matter, and I think I am better qualified to judge in this case than if I were a doctor. If I were a doctor my judgment might be warped. I am now a disinterested witness. The judge who, according to routine, should have tried Rush declined to do so because his family was connected with the Jermys'. That judge, I think, showed a very high sense of justice. But as to homœopathy and vaccination, you will see at once that no homœopath would administer a course of belladonna to a child in order that that child might not have inflammation in after-life.

2686. Is belladonna a poison?—It is a poison in excess, but not as given homœopathically.

2687. It is a poison when given in tolerably large quantities, and it must be a very small quantity indeed that will not poison. Is it morally right, on your principle, to give poison in any way whatever?—I do not think it would be right to give poison in any way whatever, but a substance which in excess would be a poison, is in a very small quantity wholesome. For instance, prussic acid is a poison, but prussic acid in a beefsteak is not a poison. Nitrogen would poison you, but nitrogen in the air is not a poison. There is no such thing as a poison unless the substance be given in a large quantity, or in an

improper quantity. In a minute and innocuous quantity it is not poison.

2688. Then is it not given in a very minute quantity when you give it by inoculation or vaccination; and can you give it in a much more minute quantity?—You hardly can, but if you give it at all it ought not to be put directly into the blood; the child should swallow it; it should be subjected to the gastric juice, and taken up by the lacteals, and the parts that were not required for the well-being of the body should be cast off; but here you put it directly into the blood.

2689. Dr. Brewer.] I think you said that you had a child of your own that suffered after vaccination; what was the age of the child when it was vaccinated?—I do not know exactly; but it would not be more than two or three months old.

2690. How long after that did the boils appear?—About three months afterwards.

2691. Were you and your wife in perfect health?—Perfect health.

2692. Have you never had any affection of the joints?—I am lame from an accident, but the knee-joint was never affected.

2693. And you have an enlarged knee, I think?—Not enlarged, only contracted; but through allopathic bungling I have been made lame for life, though I come of a very healthy stock.

2694. But at the same time you have suffered from organic disease, have you not?—Never; only my leg, through bad practice, has been injured.

2695. I think you have an extreme objection to knowledge acquired by the careful study of facts, preferring abstract propositions to such knowledge?—I do not know what ground you have for making that statement.

2696. I thought you said you chose a general abstract proposition in preference to any knowledge that could be acquired by a careful study of facts?—I should most undoubtedly prefer a principle confirmed by facts.

2697. You stated also, did you not, that any law which violates the conscience is unchristian?—I think so.

2698. Do you think that the spread of Christianity among the Jews did not violate their consciences?—It was not compulsory; if it had been compulsory it would certainly have violated their consciences.

2699. You say that in modern times the average stature and the average vigour of life is less than it was before the practice of vaccination?—That is the general impression, and it is a matter of common observation.

2700. Are you aware whether the statistical tables upon which every vital statistic is based, indicate that life is now longer and less subject to disease than it was a hundred years ago?—If that be the case, I can only say that doctors differ.

2701. Are statistical tables founded upon doctors' opinions?—No; but I say that doctors themselves differ in opinion if that be the case.

2702. But I am talking of positive facts; the statistical tables of all the life assurance offices in London?—But the figures can be so manipulated as to support any theory.

2703. But when one's whole business depends upon that you do not manipulate figures to your ruin; you are, perhaps, aware that old age in the time

time of our forefathers was a very different period from what it is now; do you know at what age "Time-honored Lancaster" died?—I do not know.

2704. Did any one of those children, the finest children then in England, live beyond the age of 58?—I cannot answer that question.

2705. Vaccination, you say, has been practised and accepted by the intelligent, and the unvaccinated are among the most abject portions of the population?—The unvaccinated, I think, must be.

2706. Then you think that the fact of the vaccinated being amongst the most intelligent, and the unvaccinated amongst the most abject portion of the population, is no evidence whatever that vaccination has been accepted by the intelligent portion of the population?—I have not said that it is no evidence; it is a fact that cannot be disputed.

2707. You say, do you not, that you object to the secretion from the cow being employed because it is lymph, the product of a suppurated sore?—Yes.

2708. But is it in any way suppuration?—I think so.

2709. What is suppuration?—It is the change of matter into pus.

2710. Is there any pus in lymph?—I think there must be in this cow lymph taken from a pustule.

2711. It is the exact opposite. If small-pox diminishes susceptibility to small-pox, is it so unreasonable to induce a modified small-pox?—But I deny that this induced small-pox does diminish susceptibility to a second attack.

2712. You say that vaccination is a physical crime; will you tell me what a crime is?—It is a violation of one of God's laws; I think if you violate any of God's laws you are guilty of crime.

2713. That is moral or religious; you say that it is quite lawful to put into the system such an amount of poison as will do good, but not so much as will do harm?—I say that a substance given homœopathically is never poisonous.

2714. I quite agree with you in that view, but still it is identically the same substance which, if given in a larger quantity, would undoubtedly be poison, is it not?—Exactly so.

2715. Is it not just possible, then, that vaccination is of that identical character?—I think not, because in that case you put the vaccine venom directly into the blood, and in the other case you do not. Moreover, you do not give it to a healthy person.

2716. Would you tell me what milk is?—It is a secretion from the cow.

2717. But from what part of the cow?—From the blood of the cow.

2718. It is put into the human stomach, and where does it go?—It is digested before being taken into the blood.

2719. And you think that before it goes there the vital power of the body prevents its being poisonous and makes it nutritious; but is there no vital power in the blood itself?—I do not think that milk is poisonous, to begin with. Bad milk would be poisonous.

2720. But is the milk that comes from a cow that suffers from vaccinia or cow-pox poisonous?—I cannot say.

2721. Is it not notorious that it is not poisonous?—I do not think that you could find a cow that has the cow-pox at the present day; I never met with a farmer who had one.

O.37.

2722. You are very much mistaken; would you be at all surprised if that which is deemed in a large proportion a poisonous thing would, if introduced into the blood even prove even beneficial?—It might be so, but it should not be introduced directly into the blood.

2723. Is not poison daily introduced directly into the blood?—It is not, it is put directly into the stomach; no man in his senses would ever lance the arm of a child and put belladonna into it.

2724. Can you not detect the poison in the blood?—Yes; but it has been subjected to the discriminating powers of the stomach before it goes into the blood.

2725. But poisons, as poisons, are found in the blood itself, are they not?—You can so saturate the system with poison that it gets into the blood.

2726. You can detect the smallest portion in the blood itself, can you not?—Yes.

2727. Mr. *Muntz*.] You stated just now, did you not, that many parties would give evidence against vaccination, but that they are afraid of speaking?—They are.

2728. For what reason?—The vaccination laws have been so harshly administered that they are positively afraid of saying anything at all about the matter; they are further afraid of incurring the displeasure of the doctors.

2729. But supposing that a man has had the misfortune to lose his child, and, as he believes, from vaccination, what injury can the doctors do him if he gives evidence?—We all know that many persons are such cowards that they are afraid of public opinion, or are afraid of the opinion of those in a higher position than themselves; the doctors for the most part are in a higher social position than the working people, and many of the working people are afraid of displeasing the doctors. Besides, it might lead to a summons compelling the vaccination of their other children.

2730. That may be so in individual cases; but do you not mean to say that all the working people are afraid?—I find, not only in Middleton but in Rochdale and Smallbridge, and other places, that many persons who have suffered in their families from vaccination are really afraid to say anything at all about the matter.

2731. You brought several declarations, I think 12 from one town, and seven from another; and I believe you have several others, some of which were certified by the mayor of Rochdale; did the parties go to the mayor at their own suggestion, or at anybody else's?—I wrote to some of the anti-vaccinators, and asked them to get me cases, and they acted upon my suggestion, knowing a great many cases beforehand.

2732. Are you aware that if you make a declaration before the mayor of a town you have to pay a small fee to the magistrate's clerk?—I am not aware of that; I do not know that any fee was paid. I know that no fee was paid by the persons who went before Mr. Jackson of Middleton.

2733. You said some were signed before the mayor of Rochdale, did you not?—Yes, there is his signature.

2734. You do not know what was paid, or who paid it?—I do not fancy anything would be paid.

2735. You were stating just now that many people were afraid of public opinion, does not that

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that show that public opinion is rather in favour of vaccination, than otherwise?—I am not saying that all these people are afraid of public opinion, I am simply saying that many people are afraid of public opinion, but these people are afraid of the doctors and magistrates who have so harshly administered the vaccination laws. When I wrote to the secretary of the Anti-vaccination League in Oldham, he told me that many persons having been fined for non-compliance with the law, were really afraid to say anything at all about the children who had been killed or injured by vaccination.

2736. But if so many people as you state have lost children by vaccination, there must be some of them who are independent of magistrates or of doctors?—Yes; and from such persons I have got these attested cases. I have from Middleton, as you have heard, several cases, but these are not a tithe of the cases that could be collected.

2737. You live in a manufacturing district, do you not?—I live in a manufacturing district.

2738. Is it not the case that in a manufacturing district the men are more often masters than the masters are themselves?—I am not aware of that. There is, I am very happy to say, a feeling of manly independence amongst many of them, but you cannot expect that feeling to prevail in an entire population.

2739. But is it not a fact that there is that feeling of manly independence (and I am very glad to know it) on the part of a very great many of the working classes?—There is undoubtedly that feeling, but it does not pervade everywhere.

2740. But if there is that feeling, is it not a very strange thing that so many of those men, losing their children in this way, should none of them have that manly independence and state the facts themselves?—It is not a fact that none of them have that manly independence; here I have a number of cases, which I am not permitted to read.

2741. You stated at the commencement of your evidence, that you would not give a disease to prevent one, did you not?—Yes.

2742. And after that you stated that doing evil that good might come was contrary to all Christian principle?—Certainly.

2743. If you had mortification of your finger, and it could not be otherwise cured, would you have your finger cut off to save your arm?—Most undoubtedly; but in that case I should have a diseased finger to begin with; whereas a child when vaccinated is free from all disease, and to create in a healthy child a positive disease, which may be followed by life-long suffering, or soon end in death, for the purpose of preventing a prospective disease which may never occur, is utterly unjustifiable on Christian grounds.

2744. Then, even if you knew that your finger was going to mortify, although it had not yet mortified, you would not have it cut off to save your arm?—Yes; but in the case of an infant you do not know that it will have small-pox.

2745. When a large majority of the people were subject to small-pox, and a vast mass of mankind were pitted with small-pox, was it not natural, the discovery of this presumed preventive having been made, that people should avail themselves of it?—Undoubtedly, and people acting on Jenner's advice have availed themselves of what was

held out as a prophylactic; but the present epidemic shows that is not a prophylactic. As to the ravages of small-pox among adults, I think they were owing in a great measure to the insane medical treatment which then prevailed. When patients were smothered in blankets, excluded from all fresh air, and denied all cooling drinks, the wonder is, not that so many died of small-pox, but that any ever recovered from small-pox, or that any person could ever enter a small-pox room without being attacked with small-pox.

2746. Have you ever turned your attention at all to the question of vaccination in foreign countries?—A little, but not very much.

2747. Are you aware that it is compulsory in almost all the northern countries of Europe?—I have been told, but I am not certain, that Count Bismarck has abrogated the compulsory law. Anti-vaccinators state that in their periodicals.

2748. Are you aware that at the opening of the recent campaign, as you are probably aware, the whole of the Prussian troops were re-vaccinated?—Yes, and a great number died from small-pox.

2749. Where?—In France.

2750. What evidence have you of that?—I have seen a letter to that effect written to a person with whom I am acquainted.

2751. Then, if you were to hear that the evidence that we had some days ago here, was that out of 2,000,000 soldiers that had been re-vaccinated, the annual number of deaths was slightly over three, while it was 104 before they were re-vaccinated, you would look upon that as mere nonsense?—I should say that different persons' figures present very different results.

2752. You said you thought it was an act of tyranny to compel children to be vaccinated?—I think so.

2753. When the wealthier classes, with very few exceptions, consider it a solemn duty to have their children vaccinated, is it an act of tyranny or a cruelty to encourage, or even to compel those who are not so well informed, or not so well educated, to follow the same course?—I think so, to compel them. Large bodies of Christians believe that to withhold from a child the rite of baptism would be to endanger its eternal safety; a risk quite as great, to say the least of it, as that of small-pox; yet no legislature would ever pass a law compelling parents to baptise their children, though the most inveterate atheist would never say that baptism could injure a child, while thousands and thousands of persons believe that vaccination is poisoning the blood of the children of this country, constantly causing disease, and frequently causing death.

2754. You said that no legislature would ever compel people to be baptized; are you aware that for centuries children were baptized by compulsion?—But I say that now no legislature would ever compel children to be baptized.

2755. Then you consider that the wealthier and better educated classes, as a rule, who deem it their duty, and make it their practice, to have their children vaccinated, are altogether wrong, and that the ignorant and uneducated are altogether right?—But I deny that the working classes are the ignorant. I believe that in Lancashire, for instance, and in the north of England, the higher order of the working classes are amongst the most intelligent people in the country.

2756. I do not wish to say that they are not intelligent,

intelligent, but, as a rule, I think you will admit that the wealthier classes are generally better educated, and have more knowledge of the world, and more experience of life, than those who work for their daily bread, and have not the time to pursue those inquiries?—Yes, in a conventional sense they are; but the wealthier classes are swayed by conventionalities, and by vested interests, and I believe that their minds are not so open to truth as those of the working classes, who are not thus influenced. I should prefer the verdict of the unsophisticated working classes on any pending question, to the verdict of an assemblage of so-called educated gentlemen.

2757. Mr. *Candlish*.] Are you a clergyman?—I am.

2758. Of the Church of England?—Yes; without cure.

2759. Have you had any medical education?—None but what I have picked up myself.

2760. You say that you have had a difficulty in getting facts in consequence of the fears of those who have suffered from vaccination?—I had no difficulty in getting the facts which I have brought with me, but I have stated that there is a great reluctance on the part of many persons to say anything at all about the cases.

2761. In answer to a question put to you by an Honourable Member, you assigned it as a reason for not giving us the full particulars relative to the six deaths of which you spoke, that the parents of the children were afraid of avowing their hostility to vaccination?—I mentioned two cases. I know one if not two sets of parents who were afraid to come forward in this matter.

2762. Do you think that there is any evil they could fear greater than the evil of death to their children?—I do not think so.

2763. Then, what would they have to be afraid of after they had endured the loss of their children?—They are afraid of the opinion of influential persons about them. There is amongst doctors, and amongst many who side with doctors, or amongst some of the wealthier persons who side with doctors, a decided antipathy to this anti-vaccination movement; and they do not like to incur the displeasure of those persons.

2764. Would it be displeasing to anybody to know that any person differed from him on the subject of vaccination?—I think so.

2765. What would there be to fear in consequence?—The fear would be more imaginary than real.

2766. I think so too, especially when, as you allege, the majority of people are on the side of anti-vaccination?—Yes.

2767. In point of fact, in that case, there would be really no fear, I presume, as they would be fortified by numbers?—There is really fear. I could show you letters to prove what I am now stating.

2768. Was the fear of the working people of the doctors, or of the people above them in social position?—I believe of both.

2769. Why have they to fear the doctors?—People do not like to offend a doctor who goes amongst their neighbours, or who may attend their own families.

2770. And they would rather suffer the loss of their children?—Some are very much afraid.

2771. Do you still adhere to your position in regard to that, or would you modify your view?—No, I would not.

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2772. Would you admit that there may be conscientious objections to your views?—Certainly; and I respect the conscientious objectors.

2773. The statements which you have given as facts as to the results of vaccination in your neighbourhood, are given, I suppose, as the opinions of the parents which you adopt?—They are, and I do believe them.

2774. Are they given on any other authority?—On no other authority than that of the parents and the neighbours.

2775. And your own belief?—And my own belief. I believe the people.

2776. You were asked if doctors could be brought to confirm your views, and your reply was, that they would not criminate themselves, was it not?—It is not to be supposed that doctors would do so.

2777. Then are you under the belief that they are acting against their own convictions when they maintain the efficacy of vaccination?—I do not express any opinion upon that subject; and I should be very sorry to do so.

2778. How could they criminate themselves unless they were acting in conscious disregard of the truth?—A doctor might vaccinate a child, and give to that child a very grave disease; but it is not to be supposed that a doctor would state to the whole neighbourhood that he had done this, and it is hardly likely that his brother doctors would do so either.

2779. Then do you believe that the doctors when they vaccinate are acting contrary to their own belief, and that they know vaccination to be useless for its purpose, and that in vaccinating they are propagating disease?—I do not say that.

2780. How can they criminate themselves in coming here to state facts; must there not be conscious knowledge as a condition precedent of crime?—I think that a man who kills any person's child by means of vaccination is guilty of a crime, though not an intentional one.

2781. Do you think that he must be going on knowingly killing others whom he vaccinates?—He may believe that vaccination is not always injurious. I do not suppose that a doctor would go on vaccinating if he thought that vaccination was always injurious.

2782. Then could it be a crime?—I think it would be a crime to poison the blood of a child, and to give it life-long disease, or cause its death.

2783. But there must be more than that; as a condition precedent to crime, the doctor must know that he is doing it, and notwithstanding his knowledge, he must persist in doing it?—I cannot suppose that a doctor would knowingly destroy or injure a child.

2784. Then that would put an end to your imputation, that doctors who vaccinate are criminals, would it not?—I do not know. A person who, by neglecting a point on a railway, causes a collision, which results in fearful destruction, would be tried for manslaughter.

2785. If the population in Lancashire is against vaccination, how does it happen that medical opinion does not follow public opinion?—I am speaking of the majority of the people.

2786. So am I; the doctors in Lancashire are pretty unanimously in favour of vaccination, are they not?—I am not sure; but I should say that a majority of the doctors would be in favour of vaccination.

2787. Mr. *Cave*.] You stated, did you not, that there is a general feeling in the part of the country

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country which you know against vaccination?—A very decided feeling.

2788. Do those papers which are issued by the Anti-Vaccination League circulate much in that district?—I think so.

2789. Do the members of the League go much among the people suggesting the same views?—Undoubtedly; I would myself, as a matter of principle, diffuse those papers amongst the people.

2790. Do you not find that among the lower classes generally, when a child dies, they are more disposed to fasten the blame upon somebody, or to attribute the death to preventible causes, than to acquiesce in it as the act of Providence?—No, I think not; I think that amongst the working people there is a very strong sense of religion.

2791. But without reference to a sense of religion, is there not a disposition, on the death of a person, to consider that the death occurred through the fault of the doctor, or through some preventible cause?—I think not.

2792. Is it not possible that those newspapers and those emissaries, yourself included, may form that public opinion which they imagine exists spontaneously?—I think not; I came to a decided conviction that vaccination was wrong before I had ever heard of the Anti-Vaccination League, and before I had ever read a single paper against vaccination.

2793. But do you not imagine that among those large centres of population, opinion is rather formed by those papers, and by meetings, than that it is the growth of spontaneous conviction?—I think there must have been a feeling against vaccination prior to the circulation of those papers, otherwise the papers would not have been accepted.

2794. You think that they only increased it?—It only increases it.

2795. You have stated that you are opposed to all compulsion; are you against compulsory sanitary laws, for instance?—I am.

2796. Would you let everybody drain his house into a cesspool, for instance?—I would not. I would have a man punished if he injured his neighbours; but I would not have the State interfere to do his work for him; because whenever the State thus interferes it does harm instead of good. We have sanitary laws, which have poisoned the streams in all the towns where those sanitary laws have been in operation.

2797. How would you have the man punished without the intervention of the State?—I think it incumbent upon every one to keep his own house in a good sanitary condition; and if he has it in a filthy state he ought to be punished for it.

2798. Is not that compulsion?—You cannot compel a man to do right; you can only punish him for doing wrong.

2799. Is not that another way of stating the same thing?—I think not. You cannot compel a man to be good, but you can punish him for doing

evil; you cannot compel a man to be honest, but you can punish him for being a thief.

2800. Then you do not object to that sort of compulsion which consists in punishing for neglect of what the law says that a man should do?—Certainly not, if it be a just law.

2801. Is not that exactly the case with regard to vaccination?—I think not. I think that the law in that case conflicts with the Divine law.

2802. You do not object to compulsion in the sense of punishing a man for doing that which the law says he must not do, or for not doing what the law says he must do?—I do not object to compulsion when it is applied for the purpose of preserving individual life, liberty, or property from aggression, but in all other cases I do object to it. Providence never compels us to accept any good thing.

2803. Do you object to compulsory education?—I do; I believe it is pauper education and must have a pauperising effect, just as the Poor-law has fostered the growth of pauperism.

2804. Mr. W. E. Forster.] Supposing that you were convinced that vaccination did protect against the small-pox, and that, therefore, the absence of vaccination increased the danger of individuals dying of the small-pox, would you then think it wrong to compel persons to have their children vaccinated?—I should, indeed.

2805. But is not that inconsistent with the answer which you have given to the Right honourable Member for New Shoreham, that you think that a man ought to be punished for doing that which endangers the life of his neighbour?—No.

2806. Then, supposing that you were convinced that the absence of vaccination endangered human life you would not think it necessary to compel vaccination in order to prevent human life being endangered; and I understand you to say that you still think it wrong; how do you reconcile those two statements?—If my neighbour is unvaccinated and I am vaccinated, and thereby protected from all risk, I have no business whatever to interfere with the free will and action of my neighbour; because his unvaccinated state cannot endanger me being vaccinated; but if my neighbour has a cesspool which is radiating pestilence all around him, he would endanger the health of my family; and I submit, with all proper respect, that the two cases are not parallel.

2807. The reason that you do not admit them to be parallel is, that you imagine that without that interference of the State, men could protect themselves, is that so?—Certainly, if vaccination be a protection.

2808. Do you consider that vaccination does in all cases produce a life-long disease?—Certainly not; I believe that some persons are so strong and their bodily powers so vigorous, that they throw off the injurious effects of vaccination; but I believe that vaccination has deteriorated the general health of the people. The two things are very different.

Mr. AARON EMERY, called in; and further Examined.

Mr.
A. Emery.
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2809. Mr. Muntz.] THE other day when you were examined at Question 2066, I asked you this: "Do you know any person of what you may call any standing in society, who has not had his child vaccinated?" Your answer appears here

to be, "Mr. Thomas Chambers, the Member for Marylebone, I believe has children, and he has not had them vaccinated." Was that a correct answer?—Yes.

2810. Now supposing that I asked Mr. Chambers

bers yesterday about that fact, and that he flatly contradicted it, and stated that he had six children, and that they were all vaccinated, would not that be a refutation of your statement?—Then how could he tell me that they had written

to him from Birkenhead to ask him if he would submit his boy to vaccination?

2811. Was it not re-vaccination?—Then I misunderstood him. I understood him to say vaccination.

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A. Emery.
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Mr. JOHN SIMON, F.R.S., called in; and Examined.

2812. Mr. W. E. Forster.] WHAT is your official position?—I am Medical Officer of the Privy Council.

2813. Your official position has, I suppose, made it your duty to examine into the question of vaccination, and of any law for compulsory vaccination?—It has.

2814. Have you listened to the inquiry which has taken place up to the present time by this Committee?—I have done so, or have read the Papers.

2815. Have you any Papers which you would

think it desirable to put in as evidence?—Fourteen years ago I had occasion to collect the evidence as it then stood, on the hygienic value of vaccination, expecting at that time that a Select Committee of the House of Commons would sit upon the subject; and I should be glad to put in as evidence certain sections, and some of the Appendix, of the Report which I then made. I should also, with the permission of the Committee, wish to put in as evidence, in supplement to that, a section of my last year's Report.—(*The Papers were delivered in. See Appendix.*)

Mr. J. Simon,
F.R.S.

Tuesday, 28th March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Mr. William Edward Forster.

Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Mr. William Henry Smith.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. RICHARD BUTLER GIBBS, called in ; and Examined.

Mr. *Gibbs*.
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2816. Mr. *Candlish*.] YOU are Honorary Secretary to the Anti-Compulsory Vaccination League, are you not?—I am.

2817. How long have you been so?—For five years.

2818. Do you wish to make any statement to the Committee respecting the introduction and establishment of the practice of vaccination in this country?—I do. I wish to say that Dr. Jenner did not profess to have discovered vaccination. He alludes to it in his work as being a tradition among those who attended on cows, that having had the cow pox, they were not subject to the infection of small-pox, and for a series of years he conducted experiments. The first experiment which he has placed on record is that on James Phipps, whose arm he inoculated from the hand of Sarah Nemes, on the 14th May 1796. He stated that he had proved from experiments that those who had had the cow-pox were perfectly free from the infection of small pox. It has been already stated in evidence, I think, that Dr. Jenner showed that the matter came originally from the horse's heel, and was transferred to the cow, and from her to the human subject; but, as it has been stated in this Committee that Dr. Jenner gave up that theory, I think it is important for the present inquiry that I should show that that theory was maintained for a long series of years. In Baron's "Life of Jenner," which I have in my hand, volume 1, page 242, he states, "It is moreover proved by direct experiment that other animals are capable of receiving the vaccine disease by inoculation, and that matter taken from pustules so produced, affords the genuine cow-pox in man. The animals on which these experiments have been tried are the dog, the goat, the she-ass, and the sheep." Then Baron states, that "subsequently to the observations above recited" (that is, in 1803) "many opportunities were afforded of verifying them, insomuch that Dr. Jenner was in the practice of using equine matter with complete success. He supplied myself and many of his medical friends from this source. He also transmitted it to Edinburgh, where it produced

the genuine cow-pox. A fact similar to that which occurred to Dr. Sacco was observed in Paris in 1812. A coachman who had not had small-pox, and who dressed a horse affected with the grease, had a crop of pustules on his hands which resembled the vaccine. Two children were inoculated from these pustules, and the genuine vaccine was excited in both; from this stock many successive inoculations were effected, all possessing the proper character. A similar series of inoculations took place from another infant who was infected from one of the scabs taken from the pustules on the hand of the coachman." Then Dr. Copland in his article on Vaccination in the Medical Dictionary, which is a standard work, I believe, in all medical libraries, says, "Dr. Jenner believed that they" (that is vaccinia in the cow and the grease in horses) "were both identical, and that cow-pox never occurs in dairy districts, except where there is access to horses; he thereby denied the spontaneous origin of the disease in the cow. Later observations have, however, proved not only the identity of cow-pox and grease, but have shown at the same time, first, that cow-pox does originate in the cow without access to horses; and, secondly, that cow-pox is communicable to man from the horse without the intervention of the cow, and with nearly equal facility as from the cow itself. Dr. Gregory states that this branch of the theory of vaccination has been investigated with great diligence by Dr. Loy, of Whitby, Dr. Sacco, of Milan, and Dr. De Carro, of Vienna. The last-named author states, 'that the matter in use at Vienna from 1799 to 1825 was partly British vaccine, and partly originated from the grease of a horse at Milan, without the intervention of the cow. The effect was so similar in every respect, that they were soon mixed; that is to say, that after several generations, and in the hands of innumerable practitioners, it was impossible to distinguish what was vaccine, and what was equine.' 'The whole British settlements,' he adds, 'were equinated; for the first liquid drop sent thither was the second generation of Milanese

nese equine, or greasy matter, transplanted at Vienna.” Then we come back to Baron’s life of Dr. Jenner, vol. 2, p. 225, and there we find that Dr. Baron alludes to those observations by Dr. Loy and Dr. Sacco; and this I apprehend is the point dwelt upon by those who say that Dr. Jenner discovered his error. “The attentive reader will likewise have observed, that the mistake in considering that disease, which is vulgarly called the grease, as the source of the cow-pox, was subsequently corrected by Dr. Jenner himself.” Now it is important to observe how he corrects it. “It was shown that the horse is liable, as well as the cow, to an eruptive disease of a variolous character; and that that disease, when communicated to man, is capable of affording protection against small-pox, even though it had never passed through the cow. For the most part, however, the equine affection was seldom recognised in the dairies, except in connection with a similar disorder in the cows. The last time, I believe, that Dr. Jenner had an opportunity of tracing this connection was in 1817, and I copy the following memorandum from a manuscript written on the 1st of April of that year.”

2819. With what object are you reading this?—I want to show that Dr. Jenner maintained the theory that the disease originated in the horse at a later period of his life. This was in 1817, six years before his death.

2820. Is Dr. Jenner’s opinion of so much importance here as a matter of evidence?—It is of importance here, as I will show, just now. My object is to show that the whole thing is as much a matter of experiment in the present year as it was in the year 1817.

2821. Mr. *Muntz*.] Seventy-six years is a long time for experiment, is it not?—Exactly; and I maintain that the faculty ought to have come to a settlement before this. There ought to have been some points of agreement. This is the memorandum of Dr. Jenner, “Rise and progress of the equine matter from the farm of Allen at Wansell. From a horse to Allen; from Allen to two or three of his milch cows; from the cows to James Cole, a young man who milked at the farm; from James Cole to John Powell, by inoculation from a vesicle on the hand of Cole; and to Ann Powell, an infant; from Powell to Samuel Rudder; from Rudder to Sophia Orpin, and to Henry Martin; from H. Martin to Elizabeth Martin. All this went on with perfect regularity for eight months, when it became intermixed with other matter, so that no journal was kept afterwards. Proof was obtained of the patients being duly protected.” These extracts I may say are appealed to on the other side and are always given as arguments. I find other entries to the same effect; one on the 17th of May runs thus: “Took matter from Jane King (equine direct) for the National Vaccine Establishment. The pustules beautifully correct.” “The matter from this source was, I believe, very extensively diffused; I received supplies of it; and it was likewise sent to Scotland; I may mention at the same time, that some years before this period Mr. Melon, of Lichfield, had found the equine virus in his neighbourhood. He sent a portion to Dr. Jenner, and I believe it proved efficacious.” Then we come to 1867, and we find that Dr. Shortt, the general Superintendent of Vaccination in the Madras Presidency makes this communication to the “*Lancet*,” the recognised organ

of the medical profession. He states that he had been performing operations on a number of animals from four small-pox subjects, and that he has transferred the small-pox virus to the following animals; two young bulls, three heifers, one cow, one pony, two donkeys, one dog, and one goat; and he says (“*Lancet*,” 25 January 1868) that in the course of his observations he found that “The off fore-fetlock” (of a bull) “had a greasy appearance and was moist with exudation; and irritated by flies, was covered with several bleeding points. This only showed itself with the tumefactions of the skin, and subsided with them. In the goat also, the insertion on the scrotum with small-pox virus showed a distinct umbilicated vesicle, resembling genuine vaccination, but it was surrounded to the extent of two inches with a greasy moist exudation and peculiar musty odour;” and his remark on these appearances is that “the view originally propounded by Jenner, that cow-pox and grease in the horse were identical is favoured by the fact of grease showing itself in the fetlock of the first bull operated on, and in the scrotum of the goat, and appears to me confirmatory of this view.” That shows that there is in the minds of the experimentors of the present day a feeling that the grease is the original source of the vaccine; that was in 1867. In Committee of Supply in the House of Commons, on 29th July 1807, the Right honourable Spencer Perceval moved that a grant of money should be made to Dr. Jenner. Mr. Shaw Lefevre, father of the present Lord Eversley, is stated in “The evidence at large laid before the Committee of the House of Commons respecting Dr. Jenner” (by his nephew, the Rev. G. C. Jenner, published 1805) to have spoken as follows: “It is with great reluctance that I rise to oppose an act of liberality towards any individual; but I am acting solely by what I conceive to be my duty; I have a great respect for this learned physician, whose talents are highly in the estimation of mankind; but being one of those who, on a former occasion, thought that the application to the House of Commons for 20,000 *l.* was excessive, I concurred in the vote for 10,000 *l.* only. I did it under an idea which I thought was not an ill-founded one; I did it on the faith I had in the Report of a Committee of this House, which report contained much extraordinary matter, but which I thought experience might afterwards confirm; but now it does appear from the Report of the College of Physicians, that some of the matter of the former report was unfounded; that many of the statements in it went to a greater extent than experience justifies.”

2822. I presume that you wish to show the Committee that there were differences of opinion in 1807?—I am going to show that in 1802 the Committee of the House of Commons reported in favour of Dr. Jenner’s discovery on the faith of a report of the College of Physicians, that vaccination was infallible as a preventive of small-pox; and after that to show in the words of Mr. Lefevre that the matter of that report was unfounded.

2823. Some Members in the House of Commons did not concur in the conclusion at which the House arrived; is that the evidence which you wish to give?—Yes.

2824. What do you wish to add to that?—I want to show that the College of Physicians made a mistake.

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2825. *Chairman*.]

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2825. *Chairman.*] Supposing that you proved that there were 20 gentlemen in the House of Commons who did not approve of the grant to Dr. Jenner, what has that to do with the present inquiry?—It tends to show that instead of being a matter for which Jenner might have taken out a patent as a perfect discovery, it was a matter of experiment and is still a matter of experiment. Mr. Shaw Lefevre objected on the ground that the practice was a failure, and that the money should have been given to Jesty as well as Jenner; there was a division on that subject, and there was a majority of only 13. In all the statements which we see on this subject, it is stated that Dr. Jenner got the reward for this infallible discovery, and that if Jenner's practice had been kept to, there would have been no small-pox. My object is to show that there was never any sound basis for the legislation. Now I come to the next head. In 1808 Mr. Rose, the Treasurer of the Navy, brought the matter before Parliament: "Accordingly, in the House of Commons on the 9th of June 1808, he caused the various votes which had passed on the vaccine to be read, and then moved as a resolution, with a suitable preamble, 'That this House is of opinion that great public benefit would be derived from the establishment of a central institution in London, for the purpose of rendering vaccine inoculation generally beneficial to His Majesty's subjects, to be superintended by a certain number of the Royal College of Physicians and of the Royal College of Surgeons in London, and by such persons under their direction as they shall think fit.'" That motion was opposed by Sir Francis Burdett, who said that "the vaccine now presented itself with a different complexion from that which it had assumed originally." Then I will refer to what Mr. James Carrick Moore says; I am now quoting from the evidence taken before the Committee of the House of Commons in 1833.

2826. Mr. *Hibbert.*] Do you wish to show that the compulsory legislation with regard to vaccination arose from what took place in that year, or in any of the debates to which you refer?—I am now coming to the initiation of the Government interference with vaccination.

2827. In fact, you wish to give shortly the history of the legislation respecting vaccination?—Yes; that is my view, and I shall do it very shortly. Mr. Moore who is the historian of vaccination was examined before a Committee of the House of Commons, on the 25th April 1833, and after alluding to the controversies between Dr. Walker and Dr. Jenner, as to the proper mode of operation, he says (p. 114, No. 1884), "This occurred either in 1807 or at the beginning of 1808. Dr. Jenner found that his discovery was making no progress in the world; he was in dismay; I had the honour of being intimate with him, and considered the subject with all the attention that was in my power; and as his friend went to him and suggested what struck me as the only plan by which vaccination could be well established in the country; namely, to place it under the control and management of the Royal Colleges of Physicians and Surgeons of London." "Dr. Jenner approved of my advice, and accordingly went to Sir Lucas Pepys, who was the President of the Royal College of Physicians, and made the proposition to him. Sir Lucas Pepys, a man of great philanthropy, and an eminent physician, approved of the idea

highly." A plan was drawn up, approved of by three persons in office; it was proposed to Parliament by Mr. Rose, and the Vaccine Board was established by a vote of Parliament; the opposition to it being very slight indeed, only about four Members of the House of Commons objecting. I wish to show that it was objected to as an historical fact, and I was going to show the reason why it was objected to. Sir Francis Burdett says: "Now considering those failures, it appears to me very dangerous to be holding out any flattering hopes to the public by a vote of this House in favour of that which appears to be a failing experiment, we ought to be cautious lest we fall into a pernicious error;" and then there is a sentence which is well worthy of the attention of this Committee. He says "Government have not the power in this, as in other countries, to compel people to submit either to prescriptions of physicians or to operations of surgeons, or to anything else except the laws; and I doubt much whether any science is likely to be much benefited by being placed under the care of Government." Whenever there was any hint at making vaccination compulsory in those years it was immediately met by Mr. Wilberforce and other gentlemen of standing in the House with condemnation; they said they would not listen to a compulsory measure. There is clear evidence not only from the reports of speeches of gentlemen in the House of Commons, but from other things, that Dr. Jenner's practice had failed in his own hands. It will be in the knowledge of some gentlemen in this room, that Mr. Robert Duncombe Shafto, the late Member for North Durham, is much marked with the small-pox, and he told me that he had been vaccinated by Dr. Jenner himself. Then in the year 1811, it appears that the Honourable Robert Grosvenor (who is now Lord Ebury) had the small-pox, and he had been vaccinated by Jenner some years before. I should say that a proposition was made by Lord Boringdon in the House of Lords in 1813, to make vaccination compulsory, but it was immediately dismissed.

2828. Mr. *Candlish.*] We know that vaccination was not made compulsory until 1853?—Yes; and what I want particularly to show in the evidence which I have given is, that the equine matter was really the parent of a great deal of the lymph which is now in circulation. If you do not renew the matter from the cow, as some propose, in all probability a great deal of this equine matter will be in circulation after many generations.

2829. Do you agree with the sentiments expressed by the medical officer of the Privy Council in his circular, dated 6th January 1871, and can you give facts bearing upon that?—I can; Mr. Simon, in a circular, dated 6th January 1871, states that "Educated medical practitioners of every country in the world are practically unanimous in recommending the adoption of vaccination." Now, I refer to Dr. Copland in 1848, with regard to that point.

2830. The Minute upon which you were commenting is dated in this present year, and speaks of the present time, does it not?—Yes, but I presume that there will be no doubt in this Committee about the want of unanimity in the profession. If this Committee do assume that the profession is unanimous they must allow me to say a few words about it. I am going to read now from Dr. Copland's book.

2831. But

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2831. But can the opinion of a medical man in 1848 correct the statement which you have read, dated January 1871?—Dr. Copland was a man of great erudition, as all medical men know; and his works are all standard works, and he writes thus, in 1848: “At the time of my writing this, just half a century has elapsed since the discovery and introduction of vaccination, and after a quarter of a century of transcendental laudation of the measure, with merely occasional whisperings of doubt, and after another quarter of a century of reverberated encomiums from well-paid Vaccination Boards, raised with a view of overbearing the increasing murmurings of disbelief among those who observe and think for themselves. The middle of the nineteenth century finds the majority of the profession in all latitudes and hemispheres doubtful as to the preponderance of advantages present and prospective to be obtained either from inoculation or vaccination.” That was the state of things in 1848.

2832. Have you any evidence of the prevalent medical opinion at the present time?—I am coming now to another authority, which I apprehend will be accepted; in 1853 Lord Lyttelton’s Bill, which was afterwards carried, was opposed by the “Lancet,” and on this ground: “As medical men we have a duty to perform to the public, and we trust, upon reflection, the members of the Medical Association alluded to will agree with us that this duty is binding upon them as upon us, namely, to forewarn the Legislature, and among them, especially those who are ever foremost in devising and carrying out schemes for the public good, that this Bill cannot accomplish its object; in the very nature of things it is impossible, seeing it makes no sort of provision for the supply of that *sine qua non* of protective vaccination, pure and efficient vaccine lymph; in the public mind extensively, and to a more limited extent in the profession itself, doubts are known to exist as to the efficiency and eligibility of the practice of vaccination; the failures of the operation have been numerous and discouraging; it has failed frequently by producing no effect at all; it has failed by producing a vesicle by no means clearly indicative of the existence of the vaccine disease; and it has failed in protecting persons so vaccinated from a future attack of small-pox.”

2833. *Chairman.*] Is that extract from a leader in the “Lancet”?—That is from a leader in the “Lancet” of 21st May 1853; the article proceeds thus: “Jenner predicted all this, and he carefully pointed out the distinctions (and very fine distinctions they are, and easily confounded, even by careless medical observers, much more by poor law guardians!) between the true vaccine vesicle, its progress, and its stages, and the various forms of irregular and spurious vesicles which may, or may not, protect the individual, and which may, or may not, yield a lymph which will protect others; the history of vaccination in this country renders it certain that a spurious lymph has been extensively used; a lymph which has the power of communicating to one individual the vaccine disease, and to another a spurious form of vaccine, which may be followed by small-pox in a modified, or even severe and fatal form.” Then in 1867 a petition was presented to the House of Commons by the Right honourable William Francis Cowper, M.P., which emanated from the Ladies’ Sanitary Association, of which Mrs. Cowper is an honorary secretary, and it is signed by Mrs. Cowper

and Lady Burrell, who is another honorary secretary, and by 40 physicians and surgeons; among the questions suggested in the petition are these: “Whether the vaccine lymph, after transmission through many individuals, retains its power of protecting from small-pox; whether the system of compulsory vaccination, especially in infants under two years of age, is attended with good results; whether, and how far, it is true that disease of a special kind (specific disease) is introduced by vaccination into persons, families, and communities; whether the present system of appointing and remunerating public vaccinators, and of securing effective vaccination admits of improvement; whether a system by which pure vaccine lymph should be supplied direct from the cow might not be of great advantage in checking the increasing ravages of small-pox?” That petition is signed by 40 physicians and surgeons, and I think shows that the profession is far from unanimous in recommending the adoption of compulsory vaccination without further inquiry; there is another witness to whom I should like to refer, who is well known to some persons in this room, Dr. Edward Smith, who was one of the witnesses who received Mr. Simon’s queries in 1856; he says, “The evidence from which to deduce anything beyond opinions appears to me to be of difficult attainment, and, considering the difficulty, I should attach but little value to the mere opinions of men who have not proved themselves more than ordinarily fitted for the investigation of truth, and for original inquiry;” then in other parts of the book there are other witnesses who cast much doubt upon the subject, such as Professor Hamernik, for instance, whose evidence is given at considerable length in the Blue Book; and whose judgment, I think, very remarkable: he says (I suppose it may be considered an insinuation by some, but we must take it as it stands): “But if the question of vaccination is entrusted for renewed discussion to men looked upon as conversant with the subject, and to medical and other officials, it is quite certain that the old system will be carried out and will become worse, because reforms of this kind have never been effected in this manner.” That casts a doubt upon the desirability of leaving things in the hands of officials without such inquiry as that which is now being carried on in this Committee.

2834. *Chairman.*] Have you received a number of letters (which have not been read) from gentlemen who you are prepared to say are in the medical profession, showing that they do not agree with the principle of vaccination?—Yes.

2835. *Mr. Candlish.*] Do you adduce those letters in correction of the statement that the medical profession are unanimously in favour of vaccination?—I do.

2836. Have you paid attention to the evidence taken before the Report of the Select Committee on the National Vaccination Board, 1833?—Yes, I have gone through this evidence, and I find that the Committee sat eight days, and examined 23 witnesses, but they were all on one side; there was no evidence against vaccination. I find this statement in this Report: “The vaccinators of the establishment state that they are not specially instructed how to vaccinate, nor, indeed, do such instructions appear to be necessary since all the modes of operating, though differing considerably in the detail, appear in the result

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result to be almost equally successful." Now the reading of this sentence in the present state of the controversy is, that all the modes of operating in the country, though differing considerably in the detail, appear in the result to be equally unsuccessful. "In the plans which the Committee are prepared to recommend, they do not propose at once to break up the whole of the National establishment, which they think might be attended with injurious effects. They find it stated in evidence that if the privilege were accorded to the hospital at King's Cross, and to the London Vaccine Institution, of transmitting lymph post free, that privilege without any other support from Government would be adequate to give prosperity and permanence to those institutions, and to insure the maintenance of the vaccine disease in London. If this privilege be granted, and should be followed by those favourable results which are anticipated, it may be thought prudent at some future period to make some further reduction in the National establishment." Then it is important for the Committee to see on what basis they intended to leave the establishment. Their recommendations are as follows:—"That the following sums, appearing adequate, should be allowed to meet the charge of the remainder of the proposed establishment, viz., rent of office, 100 *l.*; messenger, 55 *l.*; miscellaneous expenditure, 150 *l.*" And they further say: "The expense of the National establishment, according to the plan recommended by the Committee, will be as follows: Inspector, 200 *l.*; registrar, 200 *l.*; messenger 55 *l.*; allowance for office, 100 *l.*; incidental expenses, 150 *l.*; stationary vaccinators (but which will probably admit of further reduction), 900 *l.*; total, 1,605 *l.*"

2837. Are you aware of the course of legislation subsequent to the Committee of 1833, and the operation of the laws with respect to vaccination?—Though the Committee of 1833 recommended no legislation upon the question, seven years afterwards, in 1840, the matter was taken up, and the administration of vaccination was placed under the care of the Poor Law Board. There is one clause in that Act which it appears very important to consider at the present time. It is provided that a person whose child is vaccinated at the parish expense shall not be deemed to have received parochial relief. They do *de facto* receive payment out of the poor rates, but it was seen that this was likely to pauperise the minds of the people, and it was thought necessary to put that clause in.

2838. Are you not aware that that is the state of the law now?—Yes; but I want to show that that was the initiation of the principle, and it was afterwards objected to in the House. One result which I apprehend has followed from this, has been a demoralization of the mind of the public with regard to parochial relief. Then after some years of voluntary vaccination under the Poor Laws under the Act of 1840, it was proposed in 1853 to make it compulsory, Lord Lyttelton who introduced the Bill took the advice of the Epidemiological Society upon the subject, and a measure was passed, having that effect. The operation of the law relating to vaccination subsequently to 1853 has evoked an expression of that dislike to vaccination which seems to have pervaded the minds of most persons who have inquired into the subject, and the consequence has been a great difficulty on the part of the executive in putting the law into operation,

and in keeping it in operation; and it has, as I said just now, demoralised the public mind by making them afraid of doing that which they believe to be their duty. We have a very indistinct idea of the state of affairs when we are told that in certain districts only so many persons object to have their children vaccinated, because there are a great number of persons who are made to bow to authority by what they consider to be force, and their consciences are outraged; but as that has been largely spoken to, I do not wish to dwell upon it, but merely to confirm what has been said before.

2839. To what extent have the Anti-Vaccination League, of which you are the honorary secretary, been instrumental in creating this state of opinion?—I think the League has been credited with forming the opinion of the public to a greater extent than it deserves. I believe that it might be said that previous to the existence of the league the objections had an understanding, but no tongue; and all that we have done has been to give those objections tongue.

2840. Have you any facts to give showing that disease, such as syphilis, for instance, has been communicated by vaccination?—In addition to what has been already stated to this Committee on that subject, I have to state that subsequent to what are called the accidents at Rivolta, in the north of Italy, Mr. Henry Lee went very carefully into the cases; and in his "Lectures on Syphilitic and Vaccino-Syphilitic Inoculations, their Prevention, Diagnosis, and Treatment, illustrated by coloured plates," states that he could come to no other conclusion than that which was come to by the native doctors, namely, that syphilis was so communicated. This is one of the great cases which is being constantly referred to.

2841. Who is Mr. Henry Lee?—Mr. Henry Lee is surgeon to St. George's Hospital, and was surgeon to the Lock Hospital, and formerly he was surgeon to the King's College Hospital. He is a great authority on syphilitic diseases. This book is dated 1863, and I am going to quote from it a statement of Dr. Marone, the native doctor at Lupara, that previous to those occurrences he had no experience of syphilis among those villages. The narrative of Dr. Marone is, that he "obtained some vaccine lymph from Campo Basso, the capital of the province, and vaccinated a number of children at Lupara in Molise. The vaccine lymph was sent in glass tubes, and it was observed that it was mixed with a little blood, which affected its transparency." I think it is important for this Committee to hear Dr. Marone's own words, as showing the mind of the faculty, and as throwing some light on the assertion which is frequently made that the doctors never see these things. Dr. Marone's words are these: "It is my duty, in the cause of truth, to state fully that these inhabitants of Lupara were in nowise blind to the connection between cause and effect on the occasion of this painful occurrence; so that, in fact, I was pointed out as a guilty party in the catastrophe which had occurred; and this is the reason why I was silent at the time, not only on my own account, but also for fear of discrediting one of the most important discoveries of our science. Vaccination was declared to be the foundation of all this misery. Now that I have seen that other surgeons have met with a like series of facts, whatever may happen to myself, I have disregarded personal

personal considerations, and am no longer able to refrain from publishing the above-mentioned details, conceiving it to be a duty that I owe to science." I do not wish to take up the time of the Committee further upon that point. It must be understood that Dr. Marone is not in the category of ignorant quacks.

2842. Have you no cases which have come under your own personal observation?—I have no cases upon which I should rely.

2843. You had had opportunities of observing what you regard as the spread of disease, by reason of vaccination?—Personally I have not had many such opportunities; my line has been rather in organising the inquiry into these laws and so on; I have often been asked to go to look at children, when I have really not had time, and have therefore left that line of investigation to others.

2844. Have you no cases illustrative of the spread of disease by vaccination?—Not of my own knowledge; I have seen children in various stages of eruption, which I have been told were the effect of vaccination, but, as I say, I have not gone particularly into the cases.

2845. What is your theory explaining the prevalence of a belief in vaccination amongst the upper classes?—Because having been placed under the care of Government, a large vested interest has been created, which has been able also to influence the press; and in particular I may say that the leading journal is constantly having paragraphs and leaders in favour of vaccination; but if anybody who holds a different opinion writes a letter to that paper it is not inserted. I know, as a fact, that gentlemen have written, and their communications have been rejected because they do not agree with the statements which are constantly being reiterated. We know that "The Times" has a great deal to do with forming public opinion, and I think it will be found that it is amongst the readers of "The Times" especially that those views obtain.

2846. *Chairman.*] Do you know that such communications have been rejected?—I know that such communications have been rejected; I know that a letter written by Dr. Collins was rejected.

2847. How do you know that that was the reason that it was rejected?—Because Dr. Collins was a well-known opponent of vaccination.

2848. Was that reason given?—No; the editor never gives reasons for rejecting communications, he merely throws them into a waste-paper basket, and I infer that because the communications are all on one side; you never see anything on the opposite side.

2849. *Mr. Candlish.*] Do you think that the teaching of "The Times" is adequate to account for the belief in vaccination?—I think it has a great deal to do with it, because "The Times" is followed by other papers who pursue the same course; and the attention of the educated classes being turned in one direction, their minds are built up, and they will not actually look at anything on the opposite side. They say, "No, I have seen all about it; my mind is made up;" and then a sort of fashion obtains something like that feeling among some classes that all respectable people go to church, and that they are vulgar people who go to chapel.

2850. Do you think that the teaching of "The Times" has influenced medical opinion?—I think, from my observations of the teaching of

"The Times," that certain doctors have great influence with it. I should say that medical opinion has rather guided it, than that it has guided the medical opinion.

2851. Then "The Times" is only a secondary cause of public opinion?—That would not account for the medical opinion, though it accounts for the public opinion, and for that which has been insinuated in some questions which have been asked in this Committee about the educated classes all believing in vaccination, as if that was conclusive. I hold that that is not conclusive on a question of this sort.

2852. Have you any theory to account for the medical opinion being so general, if not so universal, in favour of vaccination?—Not being a medical man, I do not like to speak so strongly as some medical witnesses have spoken upon that subject; but the fact that there are 3,500 public vaccinators in the country, upheld by a considerable staff in London, is a very strong reason for the opinion in favour of upholding the system.

2853. But the currency of the belief was the cause of the establishment of a system of public vaccination, was it not?—The belief was evidently not the result of investigation; but when the belief is once established, it comes down as a tradition.

2854. Can you, from your own knowledge, give illustrations of the injurious effects of re-vaccination?—I can. Here is a case of police-constable John Clancy, No. 398, of the "N," or Islington Division. He has been 14 years in the force, and has never been once reported. He was re-vaccinated by Dr. Buckell, of Theberton-street, Upper-street, Islington, on Thursday, the 9th of February 1871; he was taken ill on the following Sunday, the 12th, was ill, and confined to bed about three weeks, and died on the 7th March last. He had been vaccinated when young, and had also had the small-pox. The death was certified by the divisional surgeon as bronchitis. During his last illness, and about a week before his death, a rash, of corrupt matter and pimples, came out on his forehead, and remained there till his death, and also on part of his abdomen. He was 37 years old, and has left a widow and seven young children, and his widow is in the room.

2855. *Mr. Alderman Carter.*] Do you know this of your own knowledge?—I am informed of it by the widow. He did not die of small-pox. The certificate is this: "Deaths in the district of Islington west, in the county of Middlesex; when died, 7th March 1871; 17, Chalfont-road; name and surname, John Clancey; age, 37 years; policeman; cause of death, broncho-pneumonia, three weeks; certified." He died from the effects of the re-vaccination.

2856. *Dr. Brewer.*] That is to say from broncho-pneumonia?—He was said to have had a cold when he was re-vaccinated; the widow believes that the man died from the effects of vaccination; I have a great many particulars here applying to the same case.

2857. *Mr. Candlish.*] What is the evidence from which you conclude that he died from the effects of vaccination?—His widow believed that he died from the effects of vaccination.

2858. Is there any other evidence?—I do not know whether there is any other evidence.

2859. *Chairman.*] Does the fact of the widow having told you, carry conviction to your mind

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that it was so?—From the relation of the case, I should say that it was so, but very likely I should be in antagonism with the doctors, and, of course, it would be no use for me to argue the point.

2860. Mr. *Candlish*.] Have you any other cases of the same character?—I have none that I can depend upon.

2861. *Chairman*.] Besides those cases which you have ascertained from your own knowledge, have you heard of many other cases which you believe to be true in which death has followed after vaccination or after re-vaccination?—I have heard of a good many, but I have not been able to trace them, and I have not had time to trace them. I have heard of people having their arms amputated, and so on.

2862. Mr. *Candlish*.] Have you any practical suggestions to make to this Committee respecting the amendment of the law?—Suggestions for the amendment of the law I should find exceedingly difficult to put in form, considering that no agreement has ever been arrived at as to the number of punctures, whether the incision should be deep or superficial; how often the operation should be repeated; whether the matter should be taken from the horse, cow, ass, pig, goat, or any other animal; or whether human lymph should be exclusively used. Those are questions which are debated in the 12th Report of the Medical Officer of the Privy Council (1870), for there we find that in consequence of the arguments which were used by Dr. Blanc, in this country, who persuaded the British Medical Association largely to endorse his views that the use of human lymph was very dangerous; Dr. Seaton went on the Continent and entered into considerable investigation as to the effect of animal vaccination, which is recorded in a very elaborate paper in this book. And seeing that there is that great difference of opinion as to the matter to be used, as to whether the vaccination districts should be large or small; as to whether the practice should be principally confined to the 3,500 public vaccinators, or whether the whole medical profession should be endowed; I see no better way out of the difficulty than by recurring to the Report of the Committee of 1833, throwing the thing open, and letting the whole practice of vaccination stand on its own basis without the support of the Government. Instead of amending the laws I should be for abolishing them altogether; that is the suggestion which I have to make on the subject.

2863. Mr. *Hibbert*.] Do you mean that there should be no longer any free vaccination?—I mean that it should be taken out of the hands of the Poor Law Board and the Privy Council authorities, and disendowed.

2864. Mr. *Candlish*.] You would have all law upon the subject abolished?—Yes.

2865. Did you hear your brother, Mr. George Sleight Gibbs, give evidence before this Committee?—I did.

2866. In answer to Question 1813, your brother replied, "There is a man now in Durham gaol for not having his child vaccinated, his reason being that he has lost three children distinctly from the process." Having a letter from your brother on the subject before you at this moment, are you aware that that is an error requiring correction?—I am.

2867. Was that person committed to prison?—He was not; he was in confinement a few hours I am informed.

2868. The answer is: "His reason being, that he has lost three children distinctly from the process." I presume you will still hold that Britton's belief was that he did lose his children from that process?—Yes.

2869. But the one point that you correct is as to his being committed to prison?—Exactly.

2870. Mr. Alderman *Carter*.] I understood you to say, that you had heard of persons losing their arms from re-vaccination?—Yes.

2871. Will you give us one of those cases?—I have not been able to trace them.

2872. Can you give me any evidence that will lead me to a single case of the kind?—I have not seen one.

2873. Dr. *Brewer*.] Are you aware that many thousands of vaccinated persons were inoculated with variolous matter, from the year 1790 to the year 1816?—Yes, I have no doubt of it.

2874. Are you aware what were the results?—The results were generally stated to be nil.

2875. No person took small-pox?—No.

2876. Are you aware of any facts in relation to Denmark or the West Indies, with regard to vaccination?—I know from the whole of my reading, that you may say that no two doctors agree on this matter.

2877. Do you remember in what year compulsory vaccination was introduced into Denmark?—In 1810, I believe.

2878. Are you aware what was the number of deaths from small-pox in Copenhagen, from 1798 to 1810?—Yes; it is stated in Mr. Simon's paper, in 1798 it was 386.

2879. But from 1798 to 1810, did not 3,000 persons die of small-pox?—According to this paper, there died of small pox in 1798, 386 persons.

2880. Are you aware of any results of modern date in the West Indies, during the tremendous epidemics there, from 1818 to 1838?—I am not.

2881. Are you at all aware what were the results in Mexico?—I am not.

2882. Do you know anything of the results in Iceland?—You mean, I apprehend, as to the effects of vaccination upon small-pox. In all our public discussions on this matter, we have said that the question is the effect of vaccination on the public health, and I have always protested against its being narrowed into the effect of vaccination upon small-pox. That is a question which has been dealt with by other witnesses, and the scale is shown to be a sliding scale.

2883. Do you know anything at all of what Sir Thomas Watson says about vaccination and its effects?—I do not; but I would admit, off-hand, that a decline of small-pox may have occurred in all those countries subsequent to the introduction of vaccination, which proves nothing.

2884. Do you know what has been stated by Dr. Pringle as to Hindostan, and by Dr. Harvey, as to Rhutpore?—I know that Dr. Pringle attended the meeting of the Social Science Congress at Birmingham in 1868; and he said, "Among the prejudiced natives of India we dare not introduce a compulsory law, for fear of a rebellion."

2885. Where compulsory vaccination was introduced, what was the result?—The results were very various.

2886. Does he report the results as being various?

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various?—I do not know what Dr. Pringle's reports are.

2887. Does Dr. Harvey report the results as being various?—I do not know; but I have already read Dr. Shortt's Report.

2888. Mr. *Jacob Bright*.] Did I rightly understand you to say that this was the first time that there had been a Parliamentary inquiry on the subject of vaccination where both sides were heard?—It is the first time.

2889. Do you mean to say that there never has been an inquiry where the opponents of vaccination have been heard at all by any witnesses?—In 1802 Dr. Jenner's petition was referred to a Committee of the House of Commons, and a few witnesses (such as Dr. Moseley and Dr. Birch, and one or two others), who had not been convinced of the value of vaccination, on the ground that it had been only four years made public, were examined. That was the only exception.

2890. In previous inquiries the opponents of vaccination have not been heard?—The first inquiry was in 1802; and since that time there has been no Committee, except that of 1833, which reported in the way that I have mentioned.

2891. Therefore, in your opinion, the laws have been passed without hearing sufficiently what both parties have thought upon the matter?—Exactly.

2892. Have you heard of any cases where it is understood, or believed, that leprosy is communicated by vaccination?—I am familiar with a good many of the writings of different medical men on the subject, but I am no authority upon those points.

2893. Do you know whether leprosy is supposed to be easily communicated?—On the subject of leprosy you have had all sorts of theories, some maintaining that it is highly contagious, and some that it is not contagious.

2894. With regard to the League of which you are the secretary, can you tell me how many members there are in connection with it?—We have a considerable number of branches, and the number of members of those branches I cannot state; perhaps we have 10,000 active members.

2895. Are they for the most part in the north or the south of England?—They are all over England, but the greater proportion are in the north.

2896. In the counties of Lancashire and Yorkshire?—Yes; and in those of Durham, Nottingham, Leicester, Derby, Northampton, Kent, Sussex, Cornwall, Devon, Lincoln, Norfolk, and other places that I cannot remember; but all over the country I have correspondents.

2897. In what year was that league formed?—As soon as Mr. Bruce introduced the Bill in 1866.

2898. And it has been growing ever since, has it?—Yes, and very rapidly.

2899. Mr. *Muntz*.] You stated at the commencement of your examination that equine virus had been used to some extent instead of the vaccine virus; do you not think that that might be a cause of the vaccination not being so efficacious as it ought to have been?—Jenner maintained that that was the efficacious virus.

2900. Do you not think, that supposing there were such a thing as a real cow-pox, and he tried equine virus instead of real vaccine virus, it might amount to the non-efficiency of vaccination?—

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I should not like to set up my opinion in opposition to that of Jenner; he maintains that equine virus is the right thing.

2901. You mentioned, also, Jenner's opinion, that there was a spurious virus; do you not think that that may have often been made use of instead of the proper vaccine virus?—We have never been able to ascertain what the proper vaccine virus is; Dr. Jenner disputed with Dr. Woodville upon that very point.

2902. You are probably aware that the virus should be taken from the arm of the patient from the seventh to the ninth day?—I am.

2903. It is frequently taken from the fifth to the fifteenth, is it not?—I know that that practice is condemned.

2904. Provided it were taken on the fifth and sixth days, and on the 12th, 13th, or 14th days, would not that account for many cases where the vaccination had not produced the result that it ought to have produced, supposing the theory to be correct?—My opinion upon that point would be worth nothing. I know that in some of the Acts of Parliament it was provided that the matter should be taken on the seventh day; and Dr. Epps, who was then the director of the Royal Jennerian and London Vaccine Institution, pointed out the error to the Government, and they altered it to the eighth day, and the eighth day is now the time prescribed by Government.

2905. You mentioned a Dr. Marone, and some cases in a small village in the north of Italy; do you know Dr. Marone?—I do not; I gave it on the authority of Mr. Henry Lee.

2906. Have you been in Italy?—I have not.

2907. And you do not know what Italian doctors are?—No.

2908. Mr. *W. H. Smith*.] You referred to the lectures of Mr. Henry Lee, and you drew attention to the fact, as stated on page 192, "that the lymph used for the purpose of vaccination was impure" (in this case of Campo Basso), "being mixed with blood, and that the result shows how necessary it is to abstain from using lymph of that description." Further on you draw attention to some cases recorded by M. Lecoq, of Cherbourg, in which the same circumstance of blood having been taken with the vaccine lymph was remarked. Have you noticed Lecture 10, page 194?—I have read those lectures.

2909. Did you observe that Mr. Henry Lee commences with these words: "In the last lecture, four very simple rules were given with reference to the mode of performing vaccination. These were: 1. That a clean lancet should be used. 2. That the lymph should be taken from the vaccinator not later than the eighth day. 3. That lymph only should be so taken, and that it should be without admixture of blood, or of other secretions. 4. That the lymph should be taken from a healthy subject. These precautions are such as would naturally suggest themselves to every practical vaccinator. The third rule is, however, of much greater importance, as far as the transmission of syphilis is concerned, than any of the others. In all the instances which have been given in which vaccine-syphilitic inoculation occurred, some blood, or bloody fluid, was mixed with the vaccine lymph. As far, then, as our present evidence goes, if the third rule be accurately observed, the others, however important in other respects, are of little consequence so far as the actual transmission of syphilis is concerned. The pure vaccine lymph, it would appear, will produce

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produce only the vaccine disease, although that lymph be taken from a patient suffering from syphilis, or even from small-pox." This is a statement after giving an account of those sad cases of syphilitic inoculation in Italy. Is it fair, then, to give the Committee the impression that Mr. Henry Lee is of opinion that vaccination properly performed can give syphilitic disease?—That was not the impression that I wished to convey to the Committee; what I stated was in opposition to the statement frequently made, that there is no well-authenticated case of syphilis having been communicated by vaccine lymph, a statement which I heard made in the House of Commons by Mr. Bruce. I say that Mr. Henry Lee, who may be accepted as an authority on the subject, went into those cases and could discover no other solution of the matter. Whether the operation was properly performed is not the question.

2910. Taking Mr. Henry Lee as the authority which you say very properly he claims to be, do you agree that the pure vaccine lymph would introduce only the vaccine disease, although lymph, if taken from a person suffering from syphilis, or even from small-pox, might convey those diseases?—I should be very sorry to endorse that; I am no authority upon that point.

2911. You also quoted from an article in the "Lancet" dated the 21st May 1853. Did you recognise that the purpose which the writer of this article, agreeing with Mr. Henry Lee, had in view was to secure pure efficient vaccine lymph, and that it was not directed against vaccination, but against impure and improper vaccination?—That was not the point that I brought out. What I wanted to show was, that the profession was not unanimous on the subject; I think that the writer of that article explicitly states that the failures of the operation have been numerous, and that discouraging doubts are known to exist in the minds of the profession. That was the point that I insisted upon.

2912. But I venture to think that you should have given the whole paragraph together?—If I had read the whole of the article, I should very likely have been told that I was too long.

2913. You gave a portion of the article, did you not, which failed to give the proper drift of the writer?—I was speaking to a certain point, and I read that which appeared to me to serve my purpose.

2914. Are you aware that these three lines occur immediately above what you have quoted, "In the very nature of things it is impossible, seeing it makes no sort of provision for the supply of that *sine qua non* of protective vaccination pure and efficient vaccine lymph?—I read that.

2915. Then the article goes on to say thus: "be that as it may, it is clear that without an authoritative supervision, compulsory vaccination may prove nothing less than a mockery and delusion," so that the article argues for that which you contend against, does it not?—That was not the point that I was arguing at that moment; I was arguing against the unanimity of the profession, and that was brought out by this circular of Mr. Simon's of January the 6th, in which he says that "educated medical practitioners of every

country in the world are practically unanimous in recommending its adoption." And if they recommend the adoption of a thing of which they are so greatly in doubt, it is their own fault, and, I think, to their discredit.

2916. *Chairman.*] Am I to understand that you gave this extract from the leader of the "Lancet," in order to express your conviction that the writer of that leader did not agree with the opinion stated by Mr. Simon to be unanimous in favour of vaccination?—I take it that the profession was not unanimous on that authority at that time.

2917. Do you mean that the writer of this leader at that time did not think that vaccination was desirable?—That was not the point.

2918. Then what was the point?—It was the unanimity of the profession.

2919. In the mode of vaccination, or in the advantage of vaccination?—In recommending its adoption.

2920. Are you aware that this leader ends with this statement: "We do not say that in some form the principle of compulsion" (meaning compulsory vaccination) "may not be necessary and advisable"?—Yes; I am quite aware of that.

2921. *Mr. Cave.*] You stated that this was the first inquiry in which the opponents of vaccination had been heard; when did the opposition first manifest itself?—Three months after Dr. Jenner published his observations on the *variola vaccinia*, Dr. Moseley put out a pamphlet in opposition to it, which pamphlet is good at the present day.

2922. How long ago did any general opposition arise?—There have been always opponents, but in the absence of a compulsory law people did not trouble themselves about it; if a person could please himself there was no reason for him to show his dislike to it.

2923. Then, did what you may call the present opposition arise about the year 1866?—The opposition arose as soon as Lord Lyttelton brought in his Bill in 1853; you will find the records in the Library. There was a letter written to Sir Benjamin Hall, then President of the Board of Health (which has already been spoken to by a former witness), by my relative, John Gibbs; that was in 1856. There was considerable opposition at that time, and many petitions were presented against vaccination.

2924. *Mr. Candlish.*] Are you aware that many of the profession object to hold the appointment of public vaccinator?—I take it that the appointment of public vaccinator is taken to be a stepping stone to something better. We generally find that young men look for those poor law appointments to bring themselves into notice.

2925. In point of fact, would not one-half of the medical profession decline the appointment?—They would not think it worth their while.

2926. *Mr. Alderman Carter.*] Would that be because they object to vaccination?—No.

2927. *Mr. Candlish.*] Then the emoluments incident to the appointment cannot be very important?—If you are going to raise the question of emoluments, you must understand that the private vaccinations are more valuable than the public vaccinations.

Mr. JOHN SIMON, F.R.S. called in; and further Examined.

2928. *Chairman.*] How long have you been medical officer of the Privy Council?—I was appointed in the autumn of 1855.

2929. Before that time were you in the service of the Government, or in private practice?—I was still in private practice. I had for seven years been in the employment of the City of London as their medical officer of health, but I was also engaged in private practice, which I gave up on becoming a Government officer.

2930. For some time after you became medical officer of the Privy Council, you used to give lectures at St. Thomas' Hospital, did you not?—For 23 years I was lecturer on pathology at St. Thomas's Hospital, and I only gave up that lectureship at the commencement of the present session.

2931. It has been your business and your duty, has it not, to examine into the effects of small-pox, and the possibility of preventing it?—It has. The Papers which I have laid before the Committee (*see Appendix*) contain substantially all that I know on those subjects. They contain an immense collection of evidence, both as to the advantages which mankind has derived from vaccination, and as to the general groundlessness of the objections which have been alleged against the practice. In giving oral evidence I may, perhaps, here and there adduce some more recent illustration of a fact under discussion; but, substantially, my case is in those Papers, chiefly of 14 years ago.

2932. What opinion have you formed of the danger of small-pox without any attempt at vaccination?—I believe that in the absence of vaccination, small-pox is amongst the most contagious and most fatal pestilences with which a community can be visited.

2933. Do you believe that there would be as much danger from small-pox unchecked by vaccination at this time, as there was 50 or 100 years ago?—I do, and am prepared to adduce evidence in detail in support of that opinion.

2934. Evidence has been given in the course of this inquiry to the effect that small-pox is a declining disease in itself; are you of that opinion?—I am not; nor can I conceive any moment when it would be easier than now to prove the error of such an opinion. It would suffice to refer to the facts of the present epidemic in London, or the epidemics of which are going on in Holland. There is no evidence in those epidemics of a declining disease.

2935. You stated that you were prepared with the reason upon which you base the conviction that small-pox is not one of those epidemics which has declined in itself; upon what grounds do you base that opinion?—I might base it on the present experience of the Small-pox Hospital as to unvaccinated persons. I might quote, as an illustration, a bit of experience which has come in my way within the last few days in a report from India. I might base it upon reference to what at the present time is going on in Holland. I might base it on the common consent of medical practitioners all over the world.

2936. Taking the first of those illustrations, which I suppose is the one as to which you would be able to speak from personal knowledge, what fact would you give with regard to the disease in the Small-pox Hospital?—The mortality of unvaccinated persons in the Small-pox Hospital

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is somewhat over one-third of those who come under treatment, and that is at least as great a mortality, indeed I believe a larger mortality, than is generally reported to have occurred in the last century.

2937. Are the Committee to understand by that that of the unvaccinated persons who are admitted into the hospital, being afflicted with the disease, one-third die?—That is so; $35\frac{1}{2}$ per cent. is the proportion which Mr. Maison gives.

2938. Can you compare that with the mortality amongst those who have been vaccinated?—The mortality amongst those who have been well vaccinated is extremely small. Among those who have been vaccinated in the best manner, it is a fraction of 1 per cent.; but, taking all the vaccinated together, which includes many who have been but most imperfectly (little more than nominally) vaccinated, it would be, I believe, 7 per cent.

2939. Quite irrespectively of the mode of vaccination, or the excellency of the vaccination, or the deficiency in it, the mortality amongst the vaccinated patients is how much per cent.?—It is stated to be 7 per cent.

2940. When you speak of those who have been well vaccinated and those who have been nominally vaccinated, how do you, or how does any person at the Small-pox Hospital, find out the character of the previous vaccination?—By reference to the scars on the arm.

2941. Is it the case, I will not say universally, but almost universally, that a medical man can tell whether a patient has been vaccinated or not?—I think that there probably is never any difficulty in ascertaining vaccination, when the patient has been well vaccinated; but when you come to the other end of the scale, I can easily conceive that vaccination marks of a very faint and very imperfect quality may be overlooked. Almost certainly they would sometimes be so by an unskilled observer.

2942. The term "successful vaccination" is not infrequently used in discussions upon the subject; how do the medical profession generally interpret the words "successful vaccination"?—The word "successful" is used in more than one sense; its practical meaning for the purpose of the law is vaccination which has on the eighth day produced characteristic vaccine vesicles.

2943. That is applied to the first vaccination?—Yes.

2944. Do you suppose that a skilled medical practitioner would be able to ascertain, by inspection of the arm at any time of life, every case in which there had been a successful vaccination?—Broadly, yes. I cannot say that never, under any circumstances, will a successful vaccination mark become effaced; but, speaking generally, and of what is the rule, it is a matter of everyday observation that vaccination marks continue through life.

2945. Do you think it at all probable that any of those persons who are reported by the statistics of the Small-pox Hospital as having died, not having been vaccinated, may have been successfully vaccinated, although the traces are not evident?—I think it very improbable that any of those patients had been what a critical vaccinator would call properly vaccinated. That among them there may have been some that a slovenly man would on the eighth day have called suc-

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cessfully vaccinated, I can believe. On the other hand, as regards patients popularly said to have small-pox, although they had been successfully vaccinated, it must be remembered that patients may have vaccine vesicles on their arm, which have come too late to protect them; I mean patients who were already far advanced in the incubation of small-pox before they were vaccinated. The vaccinator of those patients had been, in one sense of the word, successful; but his success was too late for its purpose; just as a diver has been successful who brings up a body; but time makes all the difference whether he brings it up alive or dead.

2946. I wish now to ascertain how this calculation of 35 per cent. of deaths among the unvaccinated, as compared with the 7 per cent. of deaths among the vaccinated, has been arrived at. In making a return of the patients being unvaccinated, upon what grounds is that return made; is it simply made by the inspection of the arm?—It is made on inspection of the arm by a singularly careful and experienced person, Mr. Marson, of the Small-pox Hospital.

2947. You stated that the mortality among vaccinated persons, where the vaccination was of any character, was 7 per cent; have you any means of informing the Committee what was the mortality amongst those who were well vaccinated?—The experience which Mr. Marson gave me in 1857 was this: if the vaccinated are put in two classes, those who have been vaccinated in the best known manner, and those who have been least well vaccinated, the fatality of small-pox, when infecting the best vaccinated, will be five per thousand, or one-half per cent, but when infecting the worst vaccinated, will be 150 per 1,000. The risk of the one class will be 30 times the risk of the other. I quote here the statement which I made 14 years ago from Mr. Marson's then experience; but if Mr. Marson comes as a witness before the Committee, I have reason to believe that his present experience would show a considerably larger difference in favour of the best sort of vaccination.

2948. With regard to the statistics obtained from the Small-pox Hospital, you have had an opportunity, have you not, of personally convincing yourself of their truth?—I cannot personally vouch for the units of which the statistics are composed.

2949. But have yourself been to the Small-pox Hospital and made inquiry?—I have not made those examinations at the Small-pox Hospital, but I have been in intimate relations with Mr. Marson on the subjects of his inquiry.

2950. Then the Small-pox Hospital is merely one of the grounds upon which you base the conviction which you have stated?—Yes.

2951. There were other grounds which the Committee, I suppose, are to understand have carried conviction to you as a student of medicine?—Quite so. I referred to Holland as illustrating at the present moment the undiminished power of natural small-pox to be a severe disease at the present day. We in London lately have been very much alarmed about small-pox. The mortality which it has occasioned us, though it has never quite reached 230 a week, had been to us quite unprecedented in modern times; but thanks to our comparatively good vaccination, the mortality here has fallen very far short of that which has been seen in Holland. If we had the mortality which there has been in Holland,

if we had copied the example of Rotterdam, or of the Hague, we should have had, instead of 230 weekly deaths as our culmination, 3,000 or 4,000 deaths in a week.

2952. How do you ascertain the mortality at the Hague or at Rotterdam?—The numbers have been communicated to us from official sources, though not in formal correspondence. We know that in the week ending the 18th of March 1871 Rotterdam, with a population of 121,000 people, had 116 deaths, or nearly one per 1,000. In the previous week it was 98. The numbers in the successive weeks from the beginning of the year were 30, 37, 55, 54, 62, 63, 72, 98, 88, 98, 116. What it may be in the next week I do not know. In one week at the Hague the mortality was 121, the population being about 92,000.

2953. And that it is a statement sent to you by Dr. Ballot of Rotterdam, who, I think, is the public vaccinator and the director of the Vaccine Establishment?—It is from Dr. Ballot.

2954. Is vaccination legally prescribed in Holland?—I am not well enough acquainted with the laws concerning vaccination in Holland to speak of them. The practice in Holland is not to have early vaccination; they, as a rule, as I am informed, vaccinate their children very late, and thus it is that an epidemic of small-pox has the power of attaining those enormous dimensions.

2955. Do you know at what age they are vaccinated?—I believe they frequently put it off till six or seven years of age.

2956. Do you know at all the age at which this great mortality occurs, and whether it is among children, or infants, or at other ages?—I do not know the ages.

2957. Then I understand you to give this fact merely as a proof that small-pox is a virulent disease, almost equal in dangerous and destructive results to what it was in former years?—Yes.

2958. Can you hand in any official statement, or any statement to which you attach credence, which would give the proportion of vaccinated or unvaccinated in this mortality in Holland?—No; but in the bit of recent Indian experience which I am going to quote to you, there is some comparison of that kind made by the reporter. It is an extract from a recent report by Dr. Robert Harvey, who is surgeon to the eastern states of Rajpootana Political Agency. "It may fairly be said that small-pox is never absent from Bengal. It may leave isolated districts untouched for a year or two, but never for long, and when it does come it sweeps through the villages with an intensity now unknown in England, seizing all who have previously escaped it, and not departing till it has attacked all, or nearly all, who are unprotected. The most casual observations will satisfy anyone that very few natives of India who have not been vaccinated reach five years of age without contracting small-pox. In the recent epidemic (1868-9) only 2.24 per cent. of the cases in Bhurtpoor, and 2.18 in Agra, were persons over 10 years of age. The Agra and Bhurtpoor figures point not to the immunity [he means natural immunity] of persons over 10, but to the fact that nearly 98 per cent. of persons over that age have already had small-pox. When officiating civil surgeon at Shahabad, I found that 96 per cent. of the prisoners in the Arrah gaol had either been inoculated, or had gone through the natural

natural disease. In the Agra central prison, and in the Bhurtpoor gaol, the proportion is still higher; and the other day I carefully noted 213 adults in the Ulwar gaol, and found every one of them distinctly pitted." I have here a comparative view, extracted from Dr. Harvey's report, of the mortality from small-pox, in protected and unprotected populations in India, Bengal Presidency, during a recent epidemic. It adduces four populations, with different amounts of protectedness by vaccination, and states the death-rate per 10,000 which small-pox occasioned to each of them. The four populations compared are: Agra, virtually unprotected; Delhi, less unprotected; Bhurtpoor, partially protected; British army, protected. The small-pox death-rates in succession are these: 128·69 per 10,000 of the population in Agra; 104 and a fraction per 10,000 in Delhi; 65 and a fraction per 10,000 in Bhurtpoor; and 3·59 per 10,000 in the British army.

2959. What do you mean by "virtually unprotected"?—With no vaccination. Masses were protected by such small-pox as they had previously suffered; and the deaths which in Agra, Delhi, and Bhurtpoor bore the above very large ratio to the entire mass of population, were in fact all furnished by the small section of population which had not previously had small-pox.

2960. Do you attribute the enormous difference in the mortality between the 3·59 in the army, and the immense number in the native population, to vaccination in the one case, and want of vaccination in the other?—Entirely.

2961. Do you not think that the mode of life in the one case might have made some difference as compared with the mode of life in the other?—I confess that, as regards attacks, I do not. It may possibly have made some difference in the power of resistance to the disease in persons attacked.

2962. With regard to infectious diseases, such as typhus fever and plague; I suppose that the Committee would be right in believing that want of sanitary regulations had very much to do with both the spread and the origination of the disease?—Certainly.

2963. Do you think that that remark would not apply to small-pox?—There is very much greater likelihood that the infection of small-pox will spread where people are huddled together, where one person having the disease is breathing a confined atmosphere with many susceptible persons; but barring that sort of influence, I cannot say that I am aware of sanitary influences exerting much control over small-pox.

2964. Do you, or do you not, consider that sanitary improvements, both as regards dwellings and as regards greater cleanliness of the person, might in themselves very much diminish the prevalence of small-pox?—I have no evidence that it can do so.

2965. Do you know at all what was the system followed where the mortality was 65 per 10,000 of the population, as I think you stated it was in one place?—It was 65 per 10,000 in Bhurtpoor, where the people were partially protected. The rates which I read were uniformly proportionate to the population.

2966. During what time was that?—During the epidemic.

2967. How long did the epidemic last?—It was during part of two years, 1868 and 1869.

2968. When you say that there was that mor-

ality of 65 in 10,000 being partially protected, do you mean that vaccination was performed to some extent, but not to a great extent; or what do you mean?—There had no doubt been some vaccination there, but, as was shown by the extract which I first read, the large majority had not been vaccinated. "Partially protected," would in this case mean partially protected by vaccination. The immense majority of those who escaped did so because they previously had had small-pox.

2969. With regard to the army, is it a rule that all the soldiers must be vaccinated?—It is now, and has been for some years a rule, that all recruits on joining the army are vaccinated.

2970. Mr. Cave.] Are you speaking of native or of European soldiers?—Of European; that is to say, British.

2971. Chairman.] Have you any statistics which you can give us with regard to the effect upon the general mortality by the diminution of small-pox?—In the report of 14 years ago, I went to a very great extent into that subject. No medical man to whose opinions I should attach importance, believed that there was any connection between the *plus* and *minus* of small-pox and the *plus* and *minus* of other diseases, except as regarded the well-known power of small-pox to deteriorate for a long while the health of those who had it severely; no educated medical men attached importance to assertions that had been made, that the diminution of small-pox mortality was made up for by an increased proportion of other kinds of premature death. But, as this was alleged, however improbably, as an argument against the practice of vaccination, I went into the matter 14 years ago, I may say very thoroughly, and collected all the evidence which was obtainable on the subject. The result was, not the shadow of an indication could be found that the suppression of small-pox led to the development of any other disease; except always in a sense which I ought almost to apologise for naming to the Committee, because it is so obvious, that if a man does not die of small-pox he must sooner or later die of something else. Vaccine lymph does not pretend to confer immortality.

2972. It has been stated in evidence by several gentlemen, that the diminution of small-pox has not led to a diminution of general mortality. For instance, Dr. Pearce says in his evidence, "The rule which I have endeavoured to elucidate is that when small-pox is present, the death rate is low; when it is absent the death rate is high." Are the Committee to understand from your previous remark that you do not accept that rule?—I do not accept it; it is not a correct assertion.

2973. Can you give the Committee any statistics as to the actual comparison of the general mortality of a time at which small-pox is prevalent, with a time at which it is not prevalent?—The old mortality returns of London, relating to times when there was no complete registration of deaths, nor any such exact knowledge as we now have of numbers and ages of population, have considerable sources of fallacy in them; and it is very difficult indeed to found comparisons or conclusions upon them; but two very able men and very critical inquirers in matters of statistics, have independently of each other compared the mortalities at different periods of the last two centuries with the mortality in or about our own

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own times. One such comparison was made by Dr. Greenhow, who, in 1857, at my request examined the bills of mortality for the purposes of my then report, in order to see whether certain diseases had increased or diminished in proportion to the prevalence or absence of small-pox: his results were printed in my report, and may be referred to in the papers I have submitted. The other inquirer is Dr. Farr, who, not for the purposes of my inquiry, but for a totally different purpose, published in M'Culloch's Statistics of the British Empire, a comparison of the bills of mortality in London in several different periods, of which four were in the last two centuries. Looking at the bills of mortality as analysed by Dr. Farr, and comparing them with the statistics of the present day, I find that the small-pox death-rate of London during the 30 years, 1728 to 1757, averaged as much as 426 per 100,000 per annum; and I find that the mortality from all causes then was more than double what it is now. Going to another period, a few years further back, I find the average annual small-pox death-rate per 100,000 again in excess of 400, and the total death-rate actually 8,000, that is to say, eight per cent. per annum. In 1771-80, the annual small-pox death-rate was 502 per 100,000; and the general death-rate was 5,000 per 100,000, or five per cent. The last column of the Table to which I refer, gives Dr. Guy's statistics for the 14 years from 1840 to 1854. Here the rate of mortality from small-pox in proportion to the population is seen to be less than one-tenth of what it was in those earlier periods: instead of being 417, 426, and 502 per 100,000, it is given in the last column by Dr. Guy as 40 per 100,000. If the absence of small-pox leads to the multiplication of other diseases, one ought to see traces of this in the last line of figures. I will read what the last line, which gives the several totals, says. For the successive terms of years to which I have referred, the total rates (which I will now read in succession) are 8,000, 5,200, 5,000 (there you get the end of the dark period) and then, for Dr. Guy's period, 2,488.

2974. Then to sum up your conclusion, are the Committee to understand that so far as you can ascertain from the returns in the last century, the mortality from small-pox was then more than 400 per 100,000, the whole mortality being in one year 8,000, and in other years 5,000 per 100,000; and that in these recent returns of which you speak, the mortality from small-pox is about 40 per 100,000, the general mortality being between 2,000 and 3,000 per 100,000?—Yes; the three first periods lie between 1660 and 1780, and are compared with the modern period from 1840 to 1854.

2975. Are the Committee to understand that while the small-pox mortality has gone down from 500 per 100,000 to about 40 per 100,000, the general mortality has gone down from about 5 per cent. per annum to about $2\frac{1}{2}$ per cent. per annum?—That is the case. The Committee will of course understand that I do not put forward those Tables as perfectly correct and critical statistics of what they refer to; but I believe them to be the best evidence which can be adduced; and so far as the test goes, what they say is manifest.

2976. Can you give the Committee any information as to whether, as regards any recent epidemic of small-pox, and the mortality resulting

from that epidemic, there has or has not been any perceptible effect on the general mortality of the country?—We do not know, for any such purpose, what is the general mortality of the country. The general mortality of the country is something of which the factors are varying from hour to hour; and if you take an epidemic of small-pox, which lasts three months, or six months, or a year, you cannot measure whether or not the other factors of the general mortality are changing at the same time.

2977. Is it or is it not the case that, taking the last 50 or 100 years, the mortality of the country has considerably decreased; that is to say, that the duration of life has become longer?—I believe so.

2978. Is it not a generally acknowledged fact, that is the case?—If the death-rate in London was 50 in the last century, and is 25 now, of course the expectation of life is proportionately increased.

2979. But independently of these particular returns, is it not generally acknowledged (without going into one cause more than another) that the duration of life has increased?—Yes.

2980. Mr. Jacob Bright.] Do not these Tables end in 1854, the year when Mr. Gibbs' Tables begin?—Yes; that Table was published in 1857. But I am not aware that an extension of it to 1871 would in any degree weaken the argument I have founded on it.

2981. Chairman.] Are you aware of any other Tables having been compiled since that time?—There are the Registrar General's annual reports.

2982. Would you be able, on your future examination, to give statistics as to later times?—I would rather in this matter, if it may be so, not be held responsible by the Committee for statistics, because that is not my business. There is the Registrar General's great arithmetical department, which, no doubt, at the desire of the Committee, would give the information; and such information, coming from that department, would be guaranteed and conclusive. I have prepared two blank Tables, which I believe could be filled, or almost entirely filled, from the Registrar General's office; and if the Committee would ask for the figures to be filled in, I think that they would conclusively dispose of this branch of the Committee's inquiry.

2983. When you state that you are not to be held responsible for statistics, I suppose you mean that you have not had the preparation of the statistics, and therefore you cannot pledge yourself to the exact and precise correctness of every figure; but I presume that you do not mean to give the Committee the impression that you do not thoroughly believe in the statistics, and that they do not carry conviction to your mind?—I have statistics, which, for the present purpose, I will call private statistics, in which I entirely trust, and on which I should be quite prepared to base what I may have to state to the Committee; but, in a question of this sort, I think it much more satisfactory that the figures should come direct from the Registrar General's office, as by being filled in to these forms, which I will beg leave to explain.

2984. Are you now going to read to the Committee the heads of a form which you think it would be desirable that we should ask the official department of the Government, which is responsible for statistics, to fill up?—Yes; and then, if you please,

please, under the kind of reserve that I have expressed, that I do not profess to be a statistical authority, but only to quote in emergency such statistics as my office could extemporise for present use, I shall be prepared to answer any questions you may ask me about the statistics of the last 33 years. In these forms which I have prepared for filling up, I have endeavoured to avoid the sources of fallacy which are abundant. The names of diseases are always in process of change; new names are constantly turning up. If you take the disease of diarrhœa, for instance, the first impression would be that diarrhœa since the year 1838 had enormously increased. Diarrhœa in 1838, 1839, and 1840 was nowhere; and some years afterwards, in the present returns, you would find it a very largely figuring disease. This arises from a change of nomenclature. The word "diarrhœa" came into the returns when medical certification began; and medical certification did not begin until (I believe) about the year 1843. There are plenty of cases of that sort. The word "bronchitis," similarly, did not appear till a late period. Then there have been some shiftings of names in the Registrar General's classification; and I have endeavoured, in the forms, that I have prepared, to guard against any fallacies that might arise in these ways.

2985. With regard to diarrhœa, for instance, how was that disease called before the change?—I do not know how it was called. It may have been called "bowel complaint," or whatever the nurses or family preferred.

2986. Have you had any communication with the Registrar General to ascertain whether he would be able to furnish that information?—I have not asked him any question on the subject in the name of the Committee.

2987. Mr. *Candlish*.] Would you be prepared to accept suggestions from the other side as to the construction of that form?—I should be very anxious to make it a simple Table, but I should be thoroughly open to accept any *bond fide* suggestion for improving it.

2988. It would be much more valuable and much more potent if all parties were generally agreed as to its form, would it not?—If you look at it I think you will see that it is extremely simple. It is headed, "Mean annual death-rate, general and by particular causes, in England and Wales, per million living, in successive periods, from 1838 to 1869 inclusive." I think it quite on the cards that the Registrar General cannot give the figures down to 1869, but believe he could at least give them down to 1868. There are six periods, each consisting of a certain number of years, for which I believe him to have already made up, more or less, such reckonings as are here in question. The first period consists of the five years, from 1838 to 1842; then unfortunately comes a blank of four years, because in those years no distinction of diseases was made in the General Register Office. Next comes the triennial period, from 1847 to 1849, and then four successive periods of five years each; 1850 to 1854; 1855 to 1859; 1860 to 1864; 1865 to 1869. The causes of death are grouped under eleven heads, which bring out all main facts that are wanted. They are thus grouped, because without grouping there would be a mass of detail that I think the Committee would find merely cumbrous. Unless facts are brought into something like order for comparison, no use can be made of statistical Tables. The headings

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are these: "All causes," "Small-pox," "All causes except Small-pox," and then the distinction of those "All causes except Small-pox" under ten heads. Thus the second head (small-pox having been one) consists of "Measles, scarlatina, diphtheria, quinsey, croup, whooping-cough, fever, erysipelas;" the bulk, that is to say, of the Registrar General's miasmatic diseases, but with one group for a particular reason omitted. That particular group of the miasmatic diseases consists of "diarrhœa, dysentery, cholera;" which I put as a separate (third) heading, in order to be able to make allowance, in looking along the column, for the epidemic influence of cholera when it comes. 4th. "Respiratory diseases, including phthisis and influenza." 5th. "Nervous diseases, including teething;" including teething, because a very large proportion of the nervous diseases in the Registrar General's classification consists of convulsive diseases of children, and as a child dying with certain symptoms will sometimes be returned as having died of teething, and sometimes as having died of convulsions, I think it better, to avoid fallacy, to keep the two titles together. 6th. "Circulatory diseases, including dropsy." Dropsy has hitherto been classified apart, as a constitutional disease, or under some other head; but probably the minimum of fallacy is got, in such comparisons as are here proposed, when it is grouped with diseases of the circulation. 7th. "Digestive diseases, excluding the above-mentioned diarrhœa and teething." 8th. "Tubercular and children's developmental diseases, but omitting, as above included, phthisis and teething." 9th. "Diseases of urinary, generative, locomotive, and tegumentary systems." 10th. "Violence;" and 11th, "Other causes." Then, as a separate item of information for each period, it would be desirable to know the "Deaths, by all causes, of children under five years of age per million living under five." The above information I would think it desirable to have in one Table, for England and Wales, and in a second Table, for London. (*The form was handed in.*) Now, if you please, I am ready to give what I will call provisional answers upon the statistics of the last 30 years. I speak of my present material as semi-private statistics, because evidently my office cannot pretend to be prepared with finished statistics on so large a scale. These, which I am about to quote, have been prepared for me by Dr. Buchanan, with as much care as the very short time at our disposal has permitted; they are exactly in the two forms which I have suggested; but they do not pretend to be more than provisional.

2989. *Chairman*.] Are those statistics which show a comparison of the mortality from small-pox in different years?—Yes.

2990. What result do you obtain from those statistics?—The result to which I come is, that there appears in the statistics absolutely no connection whatever between the increase or decrease of small-pox, and the decrease or increase of other diseases, and that those who fancy that they find some connection of that sort have misled themselves by dwelling on a particular line of figures, apart from its proper context, or on some mere cookery of statistics.

2991. What result do you yourself obtain in that matter?—The result which I myself obtain is, as I say, entirely negative. As regards England and Wales, I think a man must be reckless who would speak off-hand of the variations in

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the general death-rate of England and Wales, as contingent on any particular causes which are not of enormous magnitude. The death-rate of England and Wales is a compound of a vast number of local death-rates, which may be spoken of under two great heads. There is the town death-rate of about 25 per 1,000 per annum, and there is the country death-rate of about 20½ per 1,000 per annum. Now, to talk of a rise or fall in the general death-rate of England, without reference to the movements of the population, as from rural to urban districts, is a mockery of statistics. To talk of the gross death-rate of England as being, let us say for the minute, 23 in the year 1840 and 25 (if it were so) in the year 1880, as though it proved the existence of some new cause of death, without reference to the movement of the population, would be absurd; no person who has a particle of respect for truth, or knows the meaning of statistics, could talk in that way. Every one here knows how our population is at present in course of change, from being predominantly a rural population, to becoming predominantly an urban population; every one aware of that, must know that there is a strong tendency to increase in the gross death-rate, and that that tendency to increase in the gross death-rate may be so strong as quite to swamp the influence of vaccination in controlling small-pox, and not only utterly to mask that great gain to human life, but to produce a great many other maskings of improvement. Here, indeed, is quite a conceivable thing: that all the country populations shall be improving in health by sanitary measures in the country districts, that all the town populations shall be improving in health by improvement in urban districts, and yet that the gross death-rate of England and Wales shall be larger than it was, because so large a quantity of the country population has moved into the towns.

2992. I suppose this would be an illustration, would it not, that the sanitary condition of Liverpool being notoriously bad, any commercial causes which greatly increased the population of Liverpool might increase the death rate, and yet the general influences throughout the country might be improving, and even Liverpool itself might, to some extent, be improving?—Quite so. Now, let me mention the extent of this movement. I have a note on that point as affecting the last census. It is very important, I think, that this point should be taken. Between the two last censuses the average increase of population in England and Wales was 12 per cent. upon the 10 years, as I am told; but England and Wales are divided into 11 districts, and the intercensal rate of increase in some of those districts, instead of being 12 per cent. was as high as 18½ per cent., while in others it was as low as 2 per cent. That was not owing to difference of propagation in the different districts, but to the movement of the population from one set of counties to the other set of counties.

2993. It was simply the fact that in some of the agricultural districts the population remains stationary because of emigration to the other districts?—Quite so. The Committee will no doubt see how impossible it must be to attach importance to a gross death-rate for England and Wales, without reference to considerations of that sort; but in the statements which I have read or listened to, made to the Committee about an alleged increase in the death-rate of England, I have never

heard a word of reference to this gigantic influence.

2994. Are you able to give us information upon which we can depend, as to the death-rates in town districts now compared with what they were in former years?—It is because of the importance of that question, that I have suggested to ask the Registrar General for his authentic testimony concerning London. London as long as any one remembers has been substantially the same sort of thing as it is now; everyone knows what London means; there is no ambiguity there; and in speaking of London during the last 30 or 40 years, there is no room for confusion as to what is meant. I will begin by taking the London statistics very broadly; as given me provisionally by Dr. Buchanan, from his reading of the Registrar General's returns. First of all, I take a line of "all causes," I then put small-pox under it, and I deduct, and I get the death-rates then from all diseases except small-pox; I take as my middle, or neutral period, the period in which the Compulsory Vaccination Act was passed, from 1850 to 1854 inclusive; and I propose to compare the years before with the years after that period. I find that in the five years, 1850-54, the mortality from all causes except small-pox was 23·952, or nearly 24 per thousand per annum; and I can compare with that middle period, and with one another, the years before and the years after the passing of the Compulsory Vaccination Act. Before it, I have, from the commencement of the registration system to 1850, the 12 years from 1838 to 1849 inclusive; and after it I have a period of 15 years from 1855 to 1869 inclusive. Comparing these, I find no trace of the increased mortality which is said to have added so many thousands to the annual deaths in England; I find for the first period from 1838 to 1849, 25·023, or a very small fraction above 25 per 1,000 per annum, and for the last period, from 1855 to 1869, 23·591; in other words, the average annual rate of mortality from all diseases except small-pox, is nearly 1-17th less in the latter period than in the former one.

2995. What was the mortality from small-pox during those three terms?—The average annual death-rate from small-pox per 1,000, was in the first 12 years from 1838 to 1849, ·581; for the second period, the intermediate five years, ·300; and for the last, from 1855 to 1869, ·263. Having spoken of the great insufficiency of a sanitary comparison which has not reference to the movements of the population, I may speak also of the absence which I observe of reference to the rate of birth, and to the proportion in which children exist in populations. Those comparative statistics which I have seen put before the Committee, reckon children's death-rates in their proportion to given masses of population at all ages; but a comparison founded on death-rates so calculated would certainly be inadmissible unless you could assume that children were always in a fixed proportion to the general population. But the proportion of children to the general population changes considerably; I have a note here that in the census of 1861 children under one year of age constituted 297 per 10,000 of the total population, but that in 1851 they had only constituted 275 per 10,000 of the total population.

2996. With regard to this part of the argument, I understand you to say that from your professional study, confirmed by your investigation of statistics, you have come to the conclusion that
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the diminution of small-pox does not imply the increase of other diseases, so as to keep up the average of mortality?—Most assuredly not.

2997. Does not that statement also apply to diseases generally, and have you any reason to believe in the existence of any law which kept up an average of mortality notwithstanding the decrease of a particular disease?—There is the law that the man who is not drowned may perhaps be hung, the law that sooner or later every one dies from one cause or another. With that not very original exception, I know of no “law of compensation.”

2998. But is there any law which keeps up the age of life at much the same length, making up the power which by civilisation or by medical knowledge, can be brought to bear upon one disease by a greater liability to another disease?—There is not a tittle of evidence of anything of the kind.

2999. Is it not an almost universally understood thing, both in the profession and in sanitary legislation, that all that can be attempted to be done is to cure disease?—Assuredly.

3000. Are there not many influences which may increase or lessen the mortality of the year, of much more power than even the influence of such an epidemic of small-pox as we have at this present moment?—Certainly.

3001. That is to say, for instance, such an influence as commercial depression causing a lower physical condition and power of resistance to disease amongst the labouring population?—Quite so.

3002. Have you any other statistics bearing upon this point?—With reference to the proportion of children to population, I may mention that in the five years preceding the census of 1851 the annual birth-rate to every 1,000 resident in England was 32·63; but in the five years preceding the last census it was 34·41. In other words, there was at the latter time a larger quantity of young children in the whole population, and as they are by far the largest contributors to the mortality, the general death-rate would of course in that proportion have tended to rise.

3003. Referring to your previous evidence, is it your belief, from your study of vaccination, that the children who have been vaccinated within the last five years (taking that period as a time upon which to form an opinion) have been better and more efficiently vaccinated than those persons who were children, we will say, from 15 to 10 years ago?—Yes, I may confidently say that there has been a very great improvement going on of late years in the public vaccination of this country.

3004. Do you imagine that that improvement has had an effect upon the position of the present children as compared with those who were children at a previous time, making the danger of small-pox less to them?—Yes, certainly. But may I return for a moment to the comparative statistics on which I have been examined. I spoke of the absurdity and recklessness of talking of the lump death-rates of England and Wales as if they were (except for vaccination) simple and invariable quantities. In so speaking, I referred particularly to the so-called general death-rates of England and Wales, the death-rates from all causes; but as assertions have been made to the Committee that the mortality by particular diseases in England and Wales is increasing, especially that the national death-rate by pulmonary

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consumption and other lung-diseases is increasing, I must point out that such assertions are open to the same censure. I would remind the Committee (I say remind, for my reports are presented to Parliament, though, according to the common fate of Blue Books, they are, perhaps, not always read) that the distribution of fatal lung-disease in England and Wales has been shown to be widely different in different parts of the country; and that we have had, in our office, extending over several years, a very large series of local inquiries into the causes of that distribution of lung-disease. The subject is largely dealt with in my third and fourth reports, and again largely in my sixth report, which I hold in my hand. The general lung-disease death-rate of England and Wales is enormously complex. To take an example: in my sixth report, where I go at considerable length into that subject, I draw attention to the influence of particular industries in developing lung-disease. I point out that in districts where the women practise certain industries that the men do not practise, the women will have twice as high a lung-disease mortality as the men. In places like Berkhamstead, Leighton Buzzard, Newport Pagnell, Towcester, Yecovil, Leek, Congleton, and Macclesfield, the women, and, in such of them as have also male labour, likewise the men, have terrible excess of lung-disease due to their respective industries. Then, as regards the great centres of certain important male industries, we find that at Redruth, Penzance, Wolstanton, Stoke-on-Trent, Wolverhampton, Birmingham, Aston, Sheffield, Reeth, Alston, Abergavenny, and Merthyr Tydfil, the death-rate of the men workers, aged from 45 to 65, when they are getting worn out with industrial diseases, is from 2½ to 8 times as high as it is in healthy agricultural districts. Now, when statements are put before the Committee to the effect that the Vaccination Act of 1853 has led to an increase of lung-diseases in England and Wales, while influences of this enormous strength, existing in very large proportions, are quite ignored, and there is not the smallest allusion to the question whether the particular industries of England and Wales, which develop lung-disease, are increasing or diminishing, I must say that, quite apart from the medical *non sequitur*, the mere statistical assertion of increase is entirely undeserving of confidence.

3005. What I understand you to mean is, that the number of influences which are, unhappily, existing against human life are so various, and so many of them are so powerful, that you cannot, by making a statement of the increase or decrease of the death-rate in a particular place (unless you show that it is so) have any reason to believe that that increase or decrease is due to one particular cause?—In a particular place, with the assistance of moderate local inquiry, you can; but when you take up the lump statistics of England and Wales, you cannot without inconceivable investigation attribute the increase or decrease to one particular cause.

3006. By simply finding out that there is, in any place, an increase or decrease of death-rate, unless you can show that a special cause has been in operation, you have no reason to imagine that that increase or decrease is owing to a special cause?—No. And now, having stated my total dissent from the principle of such statistics as have been put before the Committee, let me observe, as regards the real question which is raised, that, so far as I know, the respiratory diseases of

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England and Wales have rather diminished than increased. In the term "respiratory diseases," in order to avoid, as far as possible, certain sources of fallacy, I include influenza (as statistically inseparable from bronchitis), and also include phthisis.

3007. Do you make that statement in reply to the counter statement that respiratory diseases have increased in consequence of vaccination?—Yes. The deaths from respiratory diseases in England and Wales, so far as I know, have in fact rather diminished than increased; *i. e.*, taking phthisis and influenza together with the diseases which the Registrar General classifies as local diseases of the respiratory organs.

3008. I suppose that you would agree with those who say that the respiratory diseases have decreased in consequence of some improvement in sanitary arrangements?—I should hesitate to say, on such statistics as there are regarding England and Wales, that they have either increased or decreased; they seem to me to be probably about what they were at the beginning, if you take the statistics rightly; but of course phthisis, bronchitis, and pneumonia, must be in one group for comparison; you must get all the "local" respiratory diseases together, and phthisis and influenza with them; you cannot separate influenza from bronchitis, and you cannot separate phthisis from bronchitis, for a comparison of this sort.

Friday, 31st March 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. William Edward Forster.

Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

THE RIGHT HON. WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. JOHN SIMON, F.R.S., called in ; and further Examined.

3009. *Chairman.*] HAVE you any further facts which you would wish to give to the Committee with regard to what you consider to be the effect of vaccination as a protection against small-pox? —I conceive the case to be substantially such as it was 14 years ago, when I put before my then official chiefs the evidence which had accumulated as to the protectiveness of vaccination, showing broadly what its effect had been in many countries of Europe in reducing small-pox mortality. I have no different or important additional facts to add to those which are stated in the third section of my Blue Book of 1857, and which are contained in one of the extracts which I have laid before the Committee, showing how, in considerable populations, under the influence of vaccination, small-pox had fallen to the tenth, the fifteenth, the twentieth, part of what it had been before the discovery of vaccination. And that evidence, be it observed, related not to individual years, but to long periods of time; in some cases to 20, and in others to 30, or 40, or 50 years. Comparisons of that large extent were then collected and put forward; and I may add now, that, as regards England, the evidence has certainly been strengthened by the longer operation of the compulsory vaccination law. In various parts of my Report of 1857, I referred to the fact, that, according to estimates (for the exact accuracy of which I do not pretend to vouch, but of the substantial accuracy of which I am pretty well satisfied) made at the end of the last century, it appeared that, on the average of 30 years previous to the introduction of vaccination, the annual rate of small-pox mortality per million of the population was 3,000. I have not the least objection, for the purpose of argument, to put it down at 2,500, but I have no reason to doubt that the estimate was tolerably correct. Now, coming to times in which vaccination has been becoming more and more general in England, I first find that during the three years from 1838 to 1840, the small-pox mortality per million, instead of being 3,000 or 2,500, was 770 per annum. In those years, from 1838 to 1840, there was no vaccination law, and such vaccination as there was in the country was the vaccination which was given of charity. In 1840 and 1841 were established the first Parliamentary arrangements for vaccination. We

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have then nine years from 1841 to 1853 inclusive, omitting four years, for which unfortunately there are no statistics of disease: and looking at the statistics of these nine years, during which the optional system of public vaccination was prevailing, we find that the annual small-pox death-rate per million of the population was 304. Now the compulsory vaccination law was passed, and as to that I have the facts for 15 years. The Committee probably know that the Registrar General's annual returns are not published until about two years after the year to which they relate, so that I am not able to come down later than the end of 1868; but it appears that the average small-pox death-rate for the 15 years of compulsory vaccination from 1854 to 1868, inclusive, was 184. Thus, the successive periods compared, with regard to their average annual death-rates by small-pox in England per million of population, are as follows: first, 30 years of the last century; second, three years at the beginning of our registration system when there was not any statutory vaccination; third, nine years of optional statutory vaccination; and last, 15 years of compulsory vaccination. The rates of those four periods are respectively 3,000, 770, 304, and 184.

3010. I suppose that we may describe those different periods as the period, first, of no vaccination; secondly, of charitable or private vaccination; thirdly, of optional statutory vaccination; and fourthly, of compulsory vaccination?—Yes. To make the case complete, I ought, however, to state that the 30 years of the last century were periods when not only there was no vaccination, but when small-pox inoculation was going on.

3011. During the time that there was what you call optional vaccination, although there was no compulsion, it was furnished gratuitously by the State, was it not?—Yes.

3012. Can you give us any figures showing the effect of the last Act making the compulsion more stringent?—No, not yet; it takes some years for experience of this sort to accumulate.

3013. What was the nature of the compulsion before the passing of the last Act?—The intention of the law was the same as the intention of the present law, I presume.

3014. What was the chief difference in consequence of the passing of the last law, the Act of

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1867?—There are now fewer loopholes of escape for persons who wish to avoid obedience to the law; and the present law does (which the old law did not) definitely impose on local authorities the duty of enforcing obedience to the law.

3015. Were there prosecutions under the previous law?—Yes.

3016. Have you any other fact which you wish to give within the reference to the Committee generally, apart from the extract from your book which you have handed in?—I look upon the question of the difference of prevalence of small-pox, now and in former times, as a question which has really passed beyond the domain of medical research, and that the difference is as notorious to everybody as that London is better paved and better lighted than it was in the last century.

3017. When was the date of, I will not say exactly the discovery of inoculation, but at what time was it that inoculation became at all a prevalent practice?—The latter two-thirds, and more particularly the latter half, of the last century.

3018. Can you give us any information which you believe is at all to be depended upon as to the rate of mortality from small-pox before inoculation?—The very large statistics which I give from McCulloch's "British Empire," at page 55 of my 1857 Report, state the small-pox rate of London for periods long anterior to the discovery of inoculation. The rates are per 100,000 living, and therefore to bring them up to the scale which I have just now used, one must multiply them by 10. In the period from 1629 to 1635 the small-pox death-rate is 189 per 100,000, which multiplied by 10 would be 1,890 per million. In the period from 1660 to 1679 it is 417, which, multiplied by 10, would be 4,170 per million.

3019. How do you imagine that those figures were obtained?—They were obtained by Dr. Farr, doubtless to the best of his judgment, for a special article in McCulloch's work. They are Dr. Farr's figures which I am quoting.

3020. Then, in fact, they were the best statistics of that time which Dr. Farr, in his great experience in statistics, thought could be furnished?—Clearly. In the years 1728 to 1757, the annual small-pox death-rate was 4,260 per million, and at a later period in the same century it had risen to 5,020 per million. But I would beg to point out that, in the 20 years, 1660-1679 inclusive, when the average annual small-pox death-rate of London was 4,170 per million, the general death-rate of London, as estimated by Dr. Farr, was 80,000, or eight per cent.; so that in the golden age of those who think small-pox ought to be cherished as an antidote to other diseases, the general death-rate of London was at that tremendous and quite pestilential height.

3021. Then at the time at which, according to Dr. Farr, the general death-rate of London was 80 per 1,000, the death-rate from small-pox was 4 to 5 per 1,000, or from one-twentieth to one-sixteenth of the whole?—In the particular period I last quoted small-pox contributed more than one-twentieth to a total death-rate, which was more than three times as high as our present one.

3022. I am right, am I not, in supposing that frequently there was then a destructive epidemic amounting to a plague from small-pox?—Assuredly.

3023. Is it not the case that, since the prevalence of vaccination, anything amounting to an epidemic at all approaching in force or destruc-

tiveness to the previous epidemics has ceased in counties where vaccination is general?—As regards epidemics of the magnitude of former times, that is undoubtedly so.

3024. Mr. Jacob Bright.] Had not these epidemics ceased when vaccination was not general; for instance, I am told that in Ireland vaccination has only recently become general; have not epidemics of that character long ceased in Ireland, although you had not vaccination?—The Committee, of course, know how impossible it must be to give accurate statistics for periods far back in Ireland; but I find on record that in the 10 years from 1830 to 1840 (which is as far back as I can go) the average annual number of deaths by small-pox was 5,800 on the population of 8,000,000. In the following 10 years, namely, from 1840 to 1850, the average annual number was 3,827. In the following 10 years from 1850 to 1860, the average annual number was 1,272. In 1863, the Irish compulsory vaccination law was made. In 1864, there were 854 deaths; in 1865, there were 347 deaths; in 1866, there were 187 deaths; in 1867, there were 20 deaths; in 1868, there were 19 deaths; in 1869, there were 20 deaths. Do not let me, however, be understood, in quoting these last figures, to mean that I look upon the death-rate of Ireland by small-pox, as likely to be permanently at that extremely low level; of course I do not. Small-pox cannot be extinct to that degree in Ireland. There is a certain portion of accident in the very low numbers of the last three years.

3025. Mr. Candlish.] Has not the population of Ireland been decreasing in those years?—The population has been largely decreasing.

3026. Have you the proportions?—I have not worked them out; the population in 1841 was in round numbers 8,000,000; in 1851, it was 6,500,000; in 1861, it was 5,800,000. There has been a decrease of population from above 8,000,000 to under 6,000,000; during those years, vaccination was gradually extending in the country; it was not made compulsory until 1863, but arrangements for optional vaccination have been more or less provided since 1840.

3027. Chairman.] I suppose you would say, as a rule, that the mortality of any one year would not be a fair test, but that it would require to be a range of years?—Certainly.

3028. Can you, in correcting your evidence, bring it to a mean denomination of per-centage, according to the difference of population at different times?—I will try if that can be done. I may state, as regards epidemics of small-pox in Ireland, that in the Appendix to my Blue Book of 1857, there is an admirable account (for which I was indebted to Dr. Seaton) of small-pox as prevailing in Ireland down to that time. The Census of 1841, according to that account, had found that the chief epidemic diseases of Ireland, if enumerated in their order of fatality, read thus: fever stands as the most fatal disease; next comes small-pox; then, in succession, croup, cholera, whooping-cough, measles, diarrhoea, dysentery, influenza, and, last and ninth, scarlatina.

3029. Was vaccination at that time prevalent in Ireland, or was it not?—At the census of 1841 it was very imperfectly so. No doubt there were quantities of persons vaccinated, but it would at that time be spoken of as a very ill-vaccinated country.

3030. Mr.

3030. Mr. *Jacob Bright.*] Had there not been a very great change in these islands before vaccination was compulsory, and has there not been a remarkable decrease of those scourges, including small-pox?—There has been a great reduction of some diseases; but so far as I know small-pox is not among them. So far as I know small-pox, left to itself, is the same disease as it was two or three centuries ago.

3031. *Chairman.*] You are aware that it has been stated in evidence before this Committee that vaccination is not protective against small-pox; you have already stated your reasons, founded on statistics, for believing that it is a protection, but have you any remark which you wish to make with reference to the statements which have been made, that it is not protective against small-pox; and especially have you made any inquiry with regard to the case of a nurse at the Stockwell Small-pox Hospital which was mentioned by Dr. Pearce in his evidence, in answer to Question 694, in these words: "I there had an interview with the assistant clerk, Mr. Rutherglen, and he gives me the most astounding information that at Stockwell, a nurse recently engaged, who was selected because she was pitted with the small-pox, was re-vaccinated by Dr. McCann, and is now in bed with confluent small-pox"?—The statement fortunately was a sufficiently definite one for inquiry; and I instructed one of our staff, Dr. Thorne, to visit the hospital and inquire about it.

3032. When was the visit made?—The 13th of March is the date of Dr. Thorne's report. I presume that this is the case referred to: "Annie Osborne, aged 33, a nurse, entered the hospital on February 11th; says she had been vaccinated as an infant, and that she has three marks on her left arm, but owing to the eruption of small-pox those cannot at present be seen; states that four years ago she had an attack of small-pox; the attack was light, and followed some assistance which she gave to a friend in washing out the clothes of a person who was afterwards ascertained to have died of small-pox. She has never been re-vaccinated; her present attack of small-pox commenced on the 21st of February last."

3033. Mr. *Hibbert.*] Was she a nurse at the hospital at the time?—She was a nurse at the time; her attack was 10 days after she came to the hospital.

3034. *Chairman.*] When was she engaged as a nurse?—On February 11th.

3035. Was she a patient at the time when she was engaged?—No.

3036. Then the information given you by Dr. Thorne is to the effect that she had never been re-vaccinated?—Quite so.

3037. Mr. *Candlish.*] But she had been vaccinated, had she not?—She had been vaccinated in infancy, and had had small-pox four years ago, some 28 years after her infantine vaccination.

3038. *Chairman.*] Was this her second attack of small-pox?—Yes; I presume that, because of that attack of small-pox, she was not re-vaccinated when she got to the hospital, so that in that respect the truth is just opposite to the statement made.

3039. Mr. *Candlish.*] But the fact in her case was, that she had been vaccinated in infancy, and had had small-pox twice?—Yes.

3040. *Chairman.*] Was the last attack a bad case of small-pox?—That is not here stated.

0.37.

3041. Do you consider that in order to secure persons, as far as you have a right to suppose that they can be secured, it is desirable to re-vaccinate?—I think it is. I believe that for most persons, I would even say for an overwhelming majority of persons, well vaccinated in infancy, the vaccination is a security for life even against an attack of small-pox; but, partly because there has been a great deal of indifferent vaccination, and partly because we are really not in a position to say what proportion of the once-vaccinated (if well-vaccinated) might get a relapse of susceptibility at puberty or about puberty, I think it a good general rule, that at puberty all should be re-vaccinated, subject of course to conditions of health.

3042. Have you any statement which you wish to make with regard to assertions which have been made as to deaths in the Army from small-pox?—Yes; I observe that Mr. George Gibbs, in answer to Question 1607, produces figures by which he seems to have satisfied himself that the small-pox death-rate of the Army serving in the United Kingdom is the same as that of the general population, although the Army is notoriously, under the present arrangements of vaccination, a well-protected class, and one which is getting better and better protected as time goes on; it may be spoken of as a pretty uniformly vaccinated class, and in great part a re-vaccinated class. Mr. Gibbs's argument is, that in spite of this, the Army suffers the same small-pox death-rate as the general population; I do not want to criticise over-minutely his statistical arguments, but the Committee will observe that Mr. Gibbs takes for his comparison the small-pox deaths of the general population from five years of age and upwards; yet I need not say that the Army is not, under our present system, entered quite at that early age: also his death-rate represents the proportion borne by these deaths to the population living at all ages, whereas the reckoning ought to refer to population living at the same ages as those which give the small-pox deaths. I will make the comparison on what seems to me the correct basis. If I could, for statistical purposes, take the ages from 18 to 45, I would do so; but not having the means of getting numbers of the general population for exactly those ages, I must take the ages 15 to 45. I will compare the army small-pox death-rate with that of the general male population at ages from 15 to 45, and then we come to an intelligible comparison: but to compare the Army with the general population from five years of age and upwards, would be to compare two dissimilar populations. Now, we make out that for the population of England and Wales during the 10 years from 1859 to 1868, the mean annual male death-rate by small-pox per 10,000 was 1.38 living from 15 to 45; whereas the small-pox death-rate of the soldiers in the 11 years from 1859 to 1869 was only 0.59, that is to say, the civil death-rate was about two-and-a-third times the Army rate. I would also point out that, if we had the means of making a thoroughly just comparison, the comparative immunity of the Army would show itself still more, because the comparison ought to be with the higher small-pox death-rate of town populations: the general English death-rate, of course, including masses of rural population where the small-pox mortality is comparatively low: but even with this comparison, which understates the true standard in favour of the

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the civil population, the general small-pox mortality at ages from 15 to 45 is about two-and-a-third times the Army small-pox mortality. The Navy, too, has been spoken of; one cannot speak of the protection of the Navy by vaccination, as being nearly so good as the protection of the Army. Also, the Committee will recollect that when small-pox breaks out on board ship, anything like separation is impossible; you can hardly conceive circumstances so favourable to the spread of small-pox among the unprotected or imperfectly protected as is the state of people on board ship; so having regard on the one hand to the far less thorough vaccinatedness of that population, and having regard on the other hand to the crowding of the infected and non-infected together, one would expect that when small-pox breaks out on board ship, brought on board as it often must be from seaport towns, great damage would often occur: and such has been the case; but every now and then the Navy returns, in giving us knowledge of a misfortune of this sort, give us also an opportunity of judging what the protectiveness of vaccination is. One of the worst and heaviest cases in recent Navy returns, though it did not occur in the Home Force, may be given as an illustration. It was an epidemic on board Her Majesty's ship "Octavia" in 1865 or 1866. There were 610 persons on board, of whom 589 were reported "vaccinated" and 21 "unvaccinated." The 589 vaccinated, the Committee will remember, would include all degrees of vaccination, and assuredly in many of the cases the vaccination (unless different from our land vaccination) must have been of a very unsatisfactory kind. Among the 589 vaccinated, occurred nominally 152 cases of small-pox; that, so far as it goes, is a serious and sad fact; but of those 152 cases, 147 were mild, so mild indeed, that in 83 of them there was no eruption at all, and the disease was diagnosed by the doctor on the strength simply of the febrility which the patients had: in only 5 of the 152 cases did the patient suffer confluent small-pox; and of deaths, fortunately, there were none. That is the history of the 589 who were vaccinated. On the other hand, there were 21 unvaccinated persons; of those 21, 21 took the disease, 3 mildly, 18 confluent, and 6 of the 21 died.

3043. Have you the death-rate for the Navy?—The small-pox death-rate of the Home Force in the Navy in the 10 years from 1859 to 1868 was 1·3, just a fraction below that of the civil population at the same age, if we assume the age to be the same as in the Army.

3044. Is there any rule, either in the Navy or in the Army, for re-vaccination upon enlistment?—I do not know the Navy regulations, and am not able to speak with confidence as to them; but in the Army for some years past there has been uniform vaccination (which of course is very generally re-vaccination) on enlistment. Before leaving the subject of protection, I beg leave to quote a land case which in its way (though on a small scale) is comparable to that case of the "Octavia." In 1857, there was an epidemic of small-pox at Cardiff, and the local officer of health, Dr. Payne, inquired into the circumstances of 711 children living in four streets in which small-pox especially prevailed. Of those 711, 33 were protected by former small-pox, and none of those caught the disease again; 608 were protected by vaccination and of those nearly 3 per cent., that is to say 18 in all, caught the disease. Of unprotected there were 70, and those 70 all caught the

disease. I do not know what the mortality may have been among the 18 or among the 70; but when any question of that sort (concerning the comparative dangers of natural and post-vaccinal small-pox) comes before the Committee the enormous experience of the Small-pox Hospital will be the best evidence to refer to; there is no other such evidence as that.

3045. Have you any idea of the proportion of the population of London, for instance, which is vaccinated?—I find it stated again and again by those who are arguing that vaccination is no protection against small-pox, that 50 per cent. of the population is unprotected: but the argument which is based upon that assumption rests upon the wildest illusion. In the year 1863 (when, I need not say, there was prevailing a less general vaccination than at present prevails) Dr. Seaton and Dr. Buchanan inspected the schools of London with reference to this question, and obtained results which are contained in the Appendix to my Sixth Annual Report. They examined nearly 53,000 children, mostly between 3 and 12 years of age. The upshot of their figures was this: that that about 95 $\frac{3}{4}$ per cent. were protected, namely, about 1 per cent. by previous small-pox, and the remaining about 94 $\frac{3}{4}$ per cent. by vaccination; and that only about 4 $\frac{1}{2}$ per cent. were unprotected. Supposing that to represent the general state of the population, and that, out of every 100 patients received into the Small-pox Hospital, 20 are without evidence of having previously had either vaccination or small-pox, this 20 per cent. in the *clientèle* of the Small-pox Hospital would be supplied out of 4 $\frac{1}{2}$ per cent. of the general population: and if I were to follow this matter a little further, you would see that the case even much stronger for vaccination than those figures represent.

3046. What sort of schools were those?—The elementary schools, national, infant, and other charitable schools, and workhouse schools. In those children's schools the total number examined was 52,915; with mark or marks of vaccination, 49,570; with doubtful marks of vaccination, 508; without any marks of vaccination, 2,837.

3047. I suppose that you wish to convey to the Committee that the statistics thus obtained gave a fair sample of the number of children of respectable working men throughout London who were vaccinated?—The children who were examined were about an eleventh-part of all the children in London of the same age.

3048. That, of course, would not include the part of the population who were the most distressed and the most vagrant in their habits, and whose children would not be likely to be at school?—It included workhouse schools.

3049. But would you not suppose that there would be a much larger proportion of those children who are known by the common name of "Street Arabs" who would not be vaccinated?—Many of the Street Arabs, I suppose, grow up to become recruits, so that when we examine recruits we get a very fair notion of what may be the diffusion of vaccination at that period of life. I must draw a distinction here between London and the country, because the Small-pox Hospital argument is a London argument, and therefore I speak of the London examinations of recruits, and not of those generally in the country. In the London recruit examinations of the three years from 1866 to 1868 there were 14,727 examinations,

minations, and the results in round numbers were these: that 6 per cent. had marks of small-pox; that 91½ per cent. had marks of vaccination; that therefore only the remainder, or 2¾ per cent., were unprotected, or, to speak more exactly, were without distinct or satisfactory marks of protection. An exact comparison is impossible as regards the Small-pox Hospital, unless you have all the particulars of age; but waiving that as, comparatively speaking, a minor point, and making the comparison in a lump, and taking the unprotected population to be 2¾ per cent., or thereabouts, on an average of all ages at which patients are admitted into the Small-pox Hospital, that 2¾ per cent. of the population yields 20 per cent. (if that be the proportion) of the patients of the Small-pox Hospital.

3050. Mr. Alderman *Carter*.] But the youth of London do not, as a rule, enlist into the Army, do they?—Clearly not, but probably they would be fair samples.

3051. *Chairman*.] Your calculation proceeds, does it not, upon the supposition that the London recruits were recruits out of this untended, uncared-for class?—Yes. Then I may further say, that the Small-pox Hospital gives, I believe, a somewhat unjust view of the proportions of primary and post-vaccinal small-pox: for a vast excess of the small-pox in unvaccinated subjects is in young children: and young children are, I believe, comparatively little admitted into the Small-pox Hospital. If the case could be thoroughly worked out, it would, I believe, prove much more for vaccination than as I have stated it to the Committee.

3052. Then, though it was stated, I think, the other day by Mr. George Gibbs as a pretty well-established fact, that the population of London is about half vaccinated and half unvaccinated, or nearly so, would you, from the inquiry you have made, consider that that is not the case at all?—Divided by 20, it might be about a correct representation of the state of things, I suppose. Perhaps, taking all ages below 50, about 2½ per cent. are unvaccinated. It is a matter upon which it is impossible to speak with perfect accuracy, but probably that would be not very far from the mark.

3053. With the very large proportion of the population of London vaccinated, and therefore protected as it were against small-pox, how do you account for the destructiveness of the present epidemic?—Those who speak of the destructiveness of the present epidemic (and undoubtedly it has been very destructive) perhaps do not always have before their minds sufficiently, that that London which has suffered the number of deaths has a population of 3,200,000; it is a nation. No doubt there has been a very large quantity of small-pox, large even to exist in London, but there are several points to be borne in mind with regard to this quantity of small-pox. Let it be thought, first, that the absence of vaccination of only 1 per cent. on a population of 3,200,000 gives 32,000 of persons liable to unmodified small-pox; I have said that perhaps there may be 2½ per cent., but when one is dealing with this enormous population of 3,200,000, a very minute fraction (proportionately speaking) of unvaccinated persons, leaves a very large mass of susceptibility.

3054. What you mean is this, that taking the population of London as more than 3,000,000, that 2½ per cent., which is what you say you sup-

pose is the number that might be unvaccinated, would represent a population of about 80,000 in broad figures?—Yes.

3055. And therefore, I suppose you mean by that answer to say that the present epidemic of small-pox would not be an extraordinary epidemic among a population of 80,000 unprotected individuals?—That is one point. Then there is another point; there is undoubtedly a large quantity of post-vaccinal small-pox; I will come back again to that hereafter. There is a third point; I suppose it would be generally accepted that this is an epidemic of quite extraordinary virulence; everyone who knows the rudiments of epidemiology knows that quite out of human control there are circumstances which are commonly spoken of as atmospheric, influences at all events quite out of human control, which make great years for particular epidemics; cholera, for instance, will only spread in certain years; another disease will only or preferentially spread in certain other years. Just as there is a good year for potatoes, or a good year for plums, or a good year for grapes, so there is a good year for scarlatina, a good year for measles, a good year for small-pox. We do not know the conditions which determine those preferences; but the fact is well known, and we are able in a rough way to trace cycles for the waves of our epidemics. The present has clearly been a time for an extremely malignant epidemic of small-pox, and this has come upon a population of which perhaps at the best nearly 2 per cent. would be unprotected in any way, and of whom other large numbers would be ready for post-vaccinal small-pox. And then, as if those conditions were not enough, a league of persons interested in interrupting the fulfilment of the law have for some time been very actively engaged in disseminating falsehoods against vaccination.

3056. Mr. *Jacob Bright*.] In what way are they interested in interrupting the fulfilment of the law?—I did not at that minute mean to impute a pecuniary interest; but I may say, lest I should seem to disavow a feeling which I strongly entertain, that I observe among the calumniators of vaccination advertisers of quack medicines.

3057. *Chairman*.] What is the effect of vaccination during small-pox; are there not cases in which persons are admitted into a hospital who are vaccinated after there has been reason to suppose that they have been exposed to the influence of small-pox, and who probably would have small-pox under any circumstances?—If a person is exposed to the infection of small-pox, and is then and there immediately vaccinated, the vaccination, assuming that it takes, protects him against any ill effects of the small-pox contagion to which he has been exposed. If the vaccination is done the next day, or is even done the day after his exposure to the small-pox contagion, it still protects him. The vaccination runs a quicker course than small-pox in its incubation; and the fact has been worked out exactly by some very accurate observers, as particularly by Mr. Marson, that if the man who has been exposed to small-pox contagion is vaccinated, within (I believe) two or two and a-half days of that exposure, the small-pox contagion, though already absorbed into his body, will be neutralised, and he will not have the disease. If the vaccination had been performed a little later than that, he will have both diseases; but the vaccination is still for another period of about

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24 hours capable of modifying the small-pox, though it will not prevent it. Let it be later than that, and the vesicles will still come on the patient's arm, but there will be no difference as regards the small-pox; he will have unmodified small-pox.

3058. Then it is quite possible for a man to be suffering from a very serious attack of small-pox, and yet for the cow-pox vesicles to appear?—Quite so, if his vaccination have not been performed till small-pox had already several days' start in the race.

3059. When you say that the patient would be protected, and that he would not catch small-pox, I presume that you mean to state that he would have the same amount of protection as, judging from an enormous generalisation with an immense amount of facts, he would have under any circumstances; but I do not understand you to say that vaccination is a perfect protection against small-pox?—In answering that question it is necessary to distinguish between the immediate protection, which is perfect, and the remote protection, which in a certain number of cases may, as I have said, be more or less imperfect. As regards the immediate protection (which also I believe is, in a very large majority of the well vaccinated, also the permanent state), I should be glad to refer to some of the earliest proofs which were given as to the protective power of vaccination. In the early days of the discovery almost every case of vaccination was made a test of the alleged protection. Dr. Jenner, writing in 1801, says, "upwards of 6,000 persons have now been inoculated with the virus of cow-pox, and the far greater part of them have since been inoculated with that of small-pox, and exposed to its infection in every rational way that could be devised, without effect;" and Dr. Woodville (giving public evidence in 1802) said, that within two years (1799–1801) there had been vaccinated at the Small-pox Hospital 7,500 persons, of whom about one-half were subsequently inoculated with small-pox matter, and in none of them did small-pox produce any effect.

3060. But it is the fact, is it not, that not unfrequently in medical practice cases are discovered now in which a person has been successfully vaccinated, and yet suffers from small-pox?—Of persons successfully and sufficiently vaccinated in early life, undoubtedly at about puberty a proportion re-acquire susceptibility to small-pox.

3061. But supposing that a person be successfully vaccinated as a child, and be successfully re-vaccinated at the time of puberty, do you consider that, reasonably speaking, that is a protection against small-pox?—With an extremely small margin (and I am not prepared to say that even as regards that margin there may not be room for fallacy), but subject to a very small qualification, it seems to be an absolute protection.

3062. Successful vaccination as a child, renewed by successful vaccination about the time of puberty, you consider reduces the chance of (may I say) either death or disfigurement from small-pox to something almost imperceptible?—Quite so.

3063. I do not suppose that you mean to say that it would preserve persons from a slight attack of small-pox, do you?—Very nearly.

3064. This present epidemic in London you say, judging by the general characteristics of

epidemics, is a destructive epidemic; do you mean that it is destructive by the extent to which it would be likely to spread, or by the virulence with which it would affect individual cases?—Probably in both ways; they seem to go together.

3065. Have you any statement of the actual number of deaths in London from this epidemic?—No.

3066. I see that a statement has been made in the course of the evidence before this Committee that the Prussian Government have recommended re-vaccination at the age of two years; do you know whether that is the case or not?—I have no knowledge that it is the case. I believe it to be the merest fiction, and should expect to be laughed at if I asked the question over there. Perhaps a "0" has been accidentally omitted from an official statement that vaccination is recommended at 20.

3067. Do you know anything with regard to the Prussian rules as to re-vaccination?—They re-vaccinate their army.

3068. Is it the rule in all cases in the Prussian army to vaccinate on entrance?—Yes; it must be in some absurd error, if it be stated that the Prussian Government require re-vaccination at two years of age.

3069. It has been stated in evidence that not only is vaccination not a preventive of small-pox, but that positive ill results proceed from vaccination; and, in the first place, that certain diseases have been, and frequently are, directly communicated by vaccination; with regard to syphilis especially, do you consider that syphilis has been in any case communicated by vaccination?—There is not the least doubt that, on the continent of Europe, by what has purported to be vaccination, syphilis has on several occasions been communicated.

3070. When you say that syphilis has been communicated by what has purported to be vaccination, how do you account for the attack of syphilis in those individuals?—I gave a section of my last Report to the discussion of this very difficult question. It is one of the most difficult questions with which I am acquainted; and in writing on it last year, I expressed my knowledge on the subject down to the point of time at which I was writing. That section in my 12th Report, I have laid before the Committee in the papers which serve as an Appendix to my Evidence. I refer to something like a couple of dozen of illustrations, more or less trustworthy, from continental practice; in some of those cases quite undoubtedly syphilis has been spread, even to considerable numbers of persons. Such was the Rivalta case, a most deplorable one, which has been a great deal talked of; and there have been others (extremely few) not very unlike it elsewhere on the continent. I think that in those cases there must have been conditions that are next to impossible in this country, but I have not the means of saying accurately what the conditions were. There was one foreign case of a spread of syphilis by vaccination, in which accidentally I had the means of making personal inquiry. Happening to be in Paris some half-dozen years ago, I heard of a case which had there happened; I followed it up as far as I could, and made inquiry about it. I was informed that on the occasion in question, vaccinations done under the authority of the Government, as represented by the Academy of Medicine, had, I lament to say, been

been performed by a porter of the establishment; and that what purported to be vaccine lymph was taken from a child covered with syphilitic skin-disease, and so ill of internal syphilis that it died of the disease within two or three days. This was such a criminal abuse of pretended vaccination, that no punishment which befits homicide would have been too severe for the persons responsible for it.

3071. *Mr. Candlish.*] Did both the children die?—There were several infected, but the child from whom the so-called vaccination was performed was a child covered with syphilitic skin-disease; so manifestly diseased, in fact, that the parents whose children were to be vaccinated, protested against the outrage which was being committed. To say that that performance was vaccination, is to say something that we really are not justified in saying.

3072. *Chairman.*] Supposing that, either through the ignorance or through the neglect of the operator, the vaccine lymph is taken from a child which is affected with syphilis, and another child is vaccinated with that lymph, is it probable that that child so vaccinated would have syphilis communicated to it?—I think that even with the utmost care to take the lymph absolutely without other (visible) admixture, lymph for vaccination ought not ever to be taken from a subject who can reasonably be supposed syphilitic. To use such lymph, though taken with every possible precaution against admixture, would, I think, be a most improper experiment, and without such precaution would certainly in some cases convey infection. Even as regards the most apparently unadmixed lymph from a syphilitic subject, every vaccinator should proceed upon the assumption that such lymph would communicate syphilis; but let me observe that the negative evidence is very great as to syphilis not spreading by average vaccination.

3073. But how do you account for those particular cases in which you say it did spread?—In the case I was speaking of, the Paris case, into which I was able to inquire, I am unable to say whether there was vaccination. Who can say that the wretch who did the wrong knew the difference between a vaccine vesicle and a syphilitic sore?

3074. What you mean, I presume, to say is, that what was called the lymph might have been syphilitic matter taken from a syphilitic sore?—Quite so.

3075. And you think it is a debateable point, whether the vaccine lymph taken from a child under the influence of syphilis, would or would not give syphilis, although you conceive that it would be a most criminal act of negligence on the part of any operator to take such lymph from a child in that condition, and that there would be some danger of its taking the syphilitic matter at the same time as it took the lymph?—A surgeon would be without justification who knowingly or negligently took lymph from a syphilitic child. So far as your question is a speculative one, whether if a man took from a perfectly normal vaccine vesicle lymph, unadmixed with other juices of the patient's body, that lymph would communicate syphilis, I am bound to say that I do not think it would; but that, I say, is an answer to a speculative question. Practically I should certainly recommend the members of my profession to expect that lymph taken, even without admixture, from a syphilitic child would

be syphilitic, and invariably and very vigilantly to act upon that expectation.

3076. As being the safe side to err upon?—As being, if in error, the safe side to err upon.

3077. I think I have heard, although I do not know whether I am right in the notion that I have, that experiments have been tried on the continent, which I am happy to say I do not suppose by the goodwill of the profession could be tried in England, absolutely to communicate syphilis by vaccination; is that so?—It is the case.

3078. Is it not also the case that those experiments have never succeeded in producing the disease?—It is so; but I should strongly advise the members of my profession not to attach too much importance to those negative experiments.

3079. There being this possible danger of the communication of this terrible disease by vaccination, what are the precautions against such a result which are taken in the Government vaccination?—In my Report of 1857, I pointed out that there was an absence of proper security. I observed that if the State professes to vaccinate the people, and, above all, if it compels the people to be vaccinated, it must take every possible security for the excellence of vaccination which it offers; and I went on to show that hitherto that had not been done; I quoted some experience of Mr. Marson's, of the Small-pox Hospital, as to the immense quantity of slovenly and imperfect vaccination which was done, no doubt in great part by persons who ought not to have undertaken to vaccinate. There was a great quantity of failure of vaccination in consequence of that; Mr. Marson made this statement: "It should be remembered that no authorised system of vaccination has been established in England; all persons, medical men, clergymen, amateurs, druggists, old women, midwives, &c., are allowed to vaccinate in any way he or she may think proper, and the persons operated on are considered to have been vaccinated." As soon as the Privy Council had to superintend public vaccination, this matter was brought under their consideration. The points to which Mr. Marson had drawn attention were again brought forward, as on the former occasion before the Board of Health, and I made this representation on the state of the case: "The law had provided a specific machinery for public vaccination; it had, in effect, made the use of this machinery compulsory for at least two-thirds of the population, as well as optional for the remainder; yet hitherto no security had been taken that the vaccination so universally offered, and so extensively enforced, should be useful or even harmless to its recipient. Reproaches were not unreasonably addressed to the Legislature and the Government, that a poor man was compelled, under threats of penalty or imprisonment, to take his child to be vaccinated, and virtually by some particular vaccinator, but that the vaccination which he was thus obliged to accept might, for aught law had provided, be good, bad, or indifferent. Two other considerations gave increased weight to this argument. On the one hand, it was notorious that great laxity prevailed among parochial vaccinators as to their privilege of acting by deputy; and that often a vaccinator, instead of adhering in this respect to the terms of his contract, to act either by himself or by some fully qualified medical practitioner as his substitute, would permit his duty to be performed by

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assistant or pupils possessing no legal qualification to practise. On the other hand, it was certain that, in the existing state of the law, a person might be appointed parochial vaccinator who had no sufficient knowledge of vaccination; in fact even a person who had never seen a vaccination performed, nor ever observed a vaccine vesicle during its course; for it was a natural consequence of the arrangements of public vaccination in this country that, generally speaking, our ordinary schools of medicine could have no means of practically teaching vaccination, nor hitherto had any of the public vaccinating stations been opened as schools for the purpose; and accordingly a medical student might complete his studies, and obtain his diploma, or license for practice, without having had any convenient opportunity of learning to vaccinate." That was the state of the case up to 1859.

3080. What precautions had been taken to prevent the possibility of those evils?—The Act of 1858 authorised the Privy Council to frame regulations for securing the due qualifications of persons to be contracted with for vaccination; the first thing was to secure that no one should be contracted with who did not know how to vaccinate. The ordinary apparatus of medical diplomas was here of no use, because, as I stated, a man might hold all the diplomas of the United Kingdom, and yet not have studied what requires special study in vaccination. Indeed, as hitherto there was no recognisable teaching of vaccination, no other progress could be made till we had got certain educational vaccinator stations into existence. To create such stations, and thus to provide machinery through which certificates of proficiency could be given to competent persons, was a first and most important step taken by the Privy Council.

3081. Then have regulations been issued according to which boards of guardians must stipulate for certain qualifications in a public vaccinator?—Yes; and particularly they must require a special certificate given after teaching or examination by a specially authorised person, to show that the recipient of the certificate is fit to undertake this work; that he has studied vaccination; that he knows the character of the vesicles, normal and abnormal, and knows when and where to take lymph.

3082. Is there any precaution taken by the Government to see that boards of guardians do carry out those requirements?—There is now the minute supervision of public vaccination by the inspectors of public vaccination, who visit every vaccinating district in the country in succession, so as to complete their circuit of the country as regards its vaccination work every two years, and then they start afresh. Every two years every public vaccinator's district and work are visited by a skilled critic commissioned by the central authority.

3083. Supposing that any one of those inspectors has reason to think that the guardians have not been sufficiently strict in their requirements, what course is it his duty to take?—To report the case immediately, or, if the case is not sufficiently important to require immediate reporting, to make reasonably sure that the fault will at once be amended in consequence of his local representations.

3084. To report to whom?—To me.

3085. What course would then be taken upon such a report?—Representation of the case would

be made from the Lords of the Privy Council either directly to the guardians, or to the Poor Law Board for communication to the guardians.

3086. You have spoken of the possibility of communicating syphilis by vaccination, and you think it is the safe side to err upon to suppose that that possibility exists; have you any reason to suppose that syphilis has ever been so communicated in any case that you have inquired into in England?—No such an occurrence as is reported to have happened in the Rivalta case, or in Paris, to the best of my belief, has ever hitherto happened in England; but in England there have been sporadic cases, single cases where the syphilitic infection of a patient by vaccination has been alleged, and where it has been exceedingly difficult, considering what the sources of fallacy are, to say quite positively whether this infection had really been caused by the procedure which purported to be vaccination.

3087. I suppose you mean the sort of fallacy which would arise from human nature; that a husband, who had unfortunately communicated syphilis to his wife, and thence to his child, would be only too glad if he could find some other means of accounting for the syphilis in the child; is that the source of fallacy which you mean?—Yes; I was going to refer to some fallacies which are illustrated in the evidence. Dr. Collins states in his evidence that he found that he had communicated syphilis by vaccination; I think it deserves the notice of the Committee, that Dr. Collins calls himself a public vaccinator for years before he was a duly-qualified medical practitioner. He appears to have been turned loose upon the public as a vaccinator when he was an apprentice, and I do not wonder that he found extraordinary results from vaccination. In answer to Question 220, he gives a case where he believes that he gave syphilis to a child; that child three weeks after vaccination having had sore throat and other eruptions of a syphilitic character. Now I am persuaded that if the Committee will refer to gentlemen who are conversant with syphilis, they will find that there is no precedent for sore throat and other eruptions of a syphilitic character following within three weeks on a syphilitic inoculation. Taking the case as it stands, it does not hold water. A much longer period than that would, I believe, elapse: but that is a matter upon which the Committee can have special evidence if they think it necessary. Again, Dr. Pearce finds that in three or four years, at Northampton, he had, I think he said, a couple of dozen cases. Now, the Committee, having the Blue Book of 1857 before them, know that Sir Benjamin Brodie and men of that standing in the profession, who had had unlimited professional practice, had never seen a case where vaccination could be supposed to have imparted syphilis; but Dr. Pearce finds at Northampton in three or four years from 20 to 24 cases under his observation. Now, are these cases sifted? He maintains at one part of his evidence that "the intelligent shoemakers of Northampton have evinced a determined resistance to the Compulsory Vaccination Act;" but, in Dr. Pearce's answer to Question 758, it appears that "they are a very low lot those 6,000 shoemakers" of Northampton; that "they have a community of wives," and that "it is a very impure place." In a place of that sort there would be no end of room for fallacy. A case comes, pretending to be syphilis from vaccination, in which it would be very

very probable that syphilis had come to the children by the ordinary mode of parental inoculation.

3088. *Chairman.*] With regard to hereditary syphilis, I understand you to say that although you were not convinced, yet you think it possible that syphilis might be conveyed by negligence and careless vaccination from a child who is afflicted with syphilitic sores to the child who is vaccinated; but do you think it possible that syphilis could be conveyed from a child who had no syphilitic sores, but had within its constitution hereditary syphilis as yet not developed?—That was the case about which I wished to be understood as expressing a doubt. The other cases are out of the question. No decent practitioner ever dreams of vaccinating from a child on whom he sees signs of syphilis; it is totally out of the question; no decent man ever did such a thing in this country; it is inconceivable.

3089. Do you think that there is any danger of the communication of syphilis by vaccinating a child with lymph which is obtained from another child in whom syphilis has not been developed, but who has within its constitution the hereditary taint?—If I am speaking to a practical possibility, to anything that deserves practical weight, probably not. If it is a question of an extreme theoretical subtlety, I have not the means of answering it; but answering it as a practical question, whether that is an appreciable danger in public vaccination, I should say unquestionably not; of course no practitioner would knowingly take lymph from any such child.

3090. Although you are not perfectly sure, as a matter of speculation in the study of medicine, that that is impossible; yet you do not conceive that in common daily life there is any perceptible danger of it?—That is what I mean; were it otherwise, surely all of us would have seen it. If it were the rule that a child with hereditary syphilis undeveloped gave syphilitic vaccine lymph, syphilis would frequently be seen arising after vaccination. Everyone who knows the diffusion of syphilis in the population can see that such would be the result; but notoriously no such result is to be seen.

3091. With regard to syphilis itself, does syphilis skip over a generation like gout?—The medical profession has, I believe, no definite knowledge of its doing so.

3092. Is it the opinion of the medical profession that it does do so?—Certainly not.

3093. Have you any statement which you wish to make with regard to syphilis?—Only to say, that a very careful opinion on its relation to vaccination will be found in one of the Papers which I have submitted, extracted from my last year's Report.

3094. Now, with regard to other diseases; it has been stated in evidence that other diseases are communicated by vaccination, and I was myself very much struck by an answer given to me by Dr. Collins. I gathered from Dr. Collins that he considered that scarlet fever was communicated by vaccination, and I asked him this question, "You state distinctly that scarlet fever has been caused by the introduction of vaccine matter into the body of a person?" and his answer was, "Yes;" do you think that possible?—It is an absurd proposition.

3095. Have you ever heard anything which

would at all give you the impression that scarlet fever was communicated in any way by vaccination?—Never.

3096. One argument was, that those diseases were actually communicated by the introduction of the vaccine lymph, and the other was, that the patient who was under the influence of the vaccination was put into a febrile condition, and rendered more liable to the effects of fevers of different kinds; is there any truth in that?—I have no knowledge of any such thing.

3097. Are there many cases in which vaccination is in itself a disease really affecting seriously the health of the patient?—Certainly not; vaccination is notoriously a slight temporary derangement of health; it is a substitution of that slight temporary derangement of health for small-pox.

3098. Are there not some persons, and especially some children, in such a state that vaccination might stimulate disease?—A vaccinator who knows his profession, carefully chooses his time for vaccinating; he takes care that the subject is in good health before he vaccinates; subject to that rule, I apprehend that cases such as you refer to must be of great rarity. I will admit, however, that occasionally (though very rarely) the indisposition which directly results from vaccination goes to a somewhat inconvenient extent, and that the child is put out of health by it; but then let it be considered, with particular reference to that child who so shows a special liability to be upset by vaccination, what an infinitely greater upset small-pox would be. If the minimised disturbance, if the minimised small-pox, which vaccination is, produces this temporary derangement of health, what would not natural small-pox do to the child?

3099. Do you think that there ever was an ascertained case of the death of any patient being caused by vaccination?—There has never been, I believe, a case of death from the direct effect of properly performed vaccination; but what I am sorry to say has happened (very rarely under proper treatment, though it undoubtedly in some very few cases has happened) has been, that the independent contagion of erysipelas has been caught by the vaccinated arm subsequently to vaccination, and that with that disease the patient has in some extremely few instances died. That, in that qualified sense, an occasional death in the course of the last 70 years, has resulted from vaccination, there is, I believe, no doubt. It is a very rare event, but, such as it is, there it is.

3100. Have you anything further to say with regard to the fallacies about syphilis?—With reference to the fallacies about syphilis, I spoke of Dr. Pearce's Northampton cases. In his answer to Question 2100, there is a flagrant illustration of the kind of thing I spoke about. "Mr. Wiggins, of Bradshaw-street, Northampton, had a daughter vaccinated when 12 months old; she was quite well at the time of vaccination, but five days afterwards syphilitic appearances presented themselves." Anyone who knows the rudiments of the pathology of syphilis, knows that the syphilis could have nothing to do with vaccination done five days before; those are matters of elementary knowledge.

3101. The reason upon which you ground that statement is that syphilis takes a very much longer time to develop itself?—Very much indeed. Then again I read, in answer to Question 2389, that

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Mr. William Joseph Addison describes that "The effect upon the child after vaccination was that three days afterwards it broke out in a most fearful rash in the lower part of the child, and that rash continued to increase each day, getting worse and worse." That case afterward was taken to a doctor, and it appears that the doctor spoke of it as hereditary syphilis. Without pretending to discuss whether it was hereditary syphilis, what I am quite sure of is, that it was not syphilis produced by vaccination. The date puts it totally out of the question; no person who knows anything whatever of syphilis could have spoken of cases of this description as being cases of syphilitic inoculation.

3102. Mr. *Hibbert*.] You stated that the death-rate per 1,000 in London, both from all causes and from small-pox, had decreased: taking the 12 years from 1838 to 1849, you gave three different periods; have you any statistics to show that the death-rate in the country has also decreased, as well as the death-rate of the metropolis?—I have statistics relating to England and Wales; but, for the reasons which I stated at my last examination, I do not consider them applicable to this question. The conditions are far too complex.

3103. Have you any statistics with reference to the other large populations, such as, for instance, Manchester and Liverpool?—No, I have not; I consider London a very compact and intelligible case, and the difficulty of getting information, even about London, is very great.

3104. It has been stated that the death-rate of young children in the large populations of Manchester, Liverpool, and Birmingham has increased; have you any reason to believe that that is the case?—I have no reason to believe or to disbelieve it: it may or may not be the case.

3105. But supposing that it is the case, that the death-rate of young children has increased in those populous towns, do you believe that vaccination being general is the real cause of that increase?—Certainly not.

3106. How could you account for it?—I should make local inquiry in the place, and without local inquiry I could not pretend to say. I should search locally for a special cause, and I should, judging by general experience, expect to find one of two causes in operation; either that the general sanitary condition of the place had deteriorated, that there had been more over-crowding, more stinks in the place, worse water supply; or else (which is a great governing influence) that there had been a larger employment of women in manufactures.

3107. You would agree that a great number of people being employed in manufacturing operations might increase the infantine mortality?—The employment of women enormously influences the death-rate of young children, and not only the employment of women in factories has that effect, but also the agricultural occupation of women. All occupation of women away from home, attended as it very often is by the use of opium for the children, increases the death-rate of their children.

3108. You have been asked by the Chairman whether it was not your opinion that a much larger per-centage than 50 per cent. of the population of London was vaccinated; do you remember that in the year 1867, the noble Lord the Member for Huntingdonshire made a statement to the effect that 50 per cent. of the population only was vaccinated?—The noble Lord is not

now present; he may possibly have made a slip of the tongue.

3109. Supposing that the noble Lord had made such a statement, was it based upon any statistics from the Privy Council?—Not to my knowledge; it may have been based on statistics which he misunderstood, assuming that he made the statement, but I should think it more probable that in the hurry of speaking he used a wrong number.

3110. He may have used it probably merely as an illustration; you do not know exactly how he introduced it?—I do not know how he introduced it; he may have referred to the numbers in a particular school, or in a particular district; he may have extended to London what was the state of the vaccination of children in a particular establishment, or he may have been misunderstood to make such an assertion.

3111. With reference to another question which was asked you by the Chairman about the re-vaccination of children in Prussia, is it not the case, that in Prussia children are not vaccinated until they are two years old?—I am afraid that I have not the means just now of answering that question. As regards the general question of the quantity of the unprotected population in London, an illustration was given by Dr. Pearce; he says, in answer to Question 1094, "taking the population of London, I do not believe that one-half are vaccinated. The other day the board of guardians of Marylebone gave directions that every pauper applying for relief for some time should be examined, and 75 per cent. were found unvaccinated; that is one class." Fortunately, that was an assertion which we could inquire into, and we accordingly made inquiry; whereupon Dr. Randall, who is the medical officer of St. Marylebone Workhouse, wrote to us as follows: "The story is a myth as regards St. Marylebone Workhouse. I should say that every casual has been vaccinated; a great portion willingly submit to be re-vaccinated; those who refuse have their arms examined, and in every instance I have found marks of previous vaccination; in fact, this is the reason for their refusing; only one case had not been vaccinated; that was a child nine months old; this was of course immediately done. The vaccination commenced in the casual wards of St. Marylebone on the 30th of January of this year, and has been continued nightly since that date; no one during this period has made an inspection of the wards except Mr. Hibbert and Mr. Owen at the Poor Law Board, who made their visit (not a vaccination inspection) on the first night that we commenced, viz., the 30th of January; the inspector of police has been the only other visitor."

3112. Do you know whether any other cases of small-pox have occurred in the casual wards there?—I am not aware of it.

3113. Supposing that the noble Lord the Member for Huntingdonshire made use of the statement that 50 per cent. were vaccinated, it was not based upon any figures obtained from your office?—Certainly not, so far as I know.

3114. Are you able to state whether, since the Act of 1867 was passed, any better provision has been made for the security of proper vaccination?—I think that very great improvements have been made since the Act of 1867 was passed.

3115. What are the improvements?—One of the greatest difficulties in vaccination is the supply of the vaccine lymph. The establishment

ment of a good system of public vaccination requires a good system of stational vaccination, so that the vaccinator can always find plenty of arms to choose from, and not be driven into a corner and have to take some only child that comes as a source of lymph, and that he shall not have to use preserved lymph, which is never so efficient as fresh arm-to-arm vaccination. A great deal has been done in that sense to improve our system.

3116. As a means of obtaining better lymph, and obtaining arm-to-arm vaccination, you have increased the size of the vaccination districts, have you not, very considerably?—We have increased the size of the vaccination districts very considerably.

3117. Will you state the system on which you have done that?—I did not come here to-day prepared to go into much detail as to this, but broadly I can state that the principle has been to consolidate vaccination appointments to a degree which would insure each station being thoroughly self-supporting as regards its supply of lymph. When we inspected London in 1863, it was exceptional for a station to keep up its supply of lymph. The consolidation is in course of being carried to a point which will enable every public vaccinator to do that, and with a good number of cases to choose from at each attendance.

3118. Do you recommend, as a means of carrying out that system, that the district shall not contain a lesser population than something like 25,000?—We draw our line at 25,000.

3119. Do you find any objection on the part of the parents to that system, on the ground that they are taken a long way from their homes for the purpose of having their children vaccinated?—I cannot say that a complaint of that kind has come under my notice, but the Committee will see that it is a choice whether the mother shall travel a somewhat longer distance on the one day, with the certainty of getting her child vaccinated, by reason of lymph being there to vaccinate it with, or whether she shall go, perhaps several times fruitlessly, not finding a child from whom hers can be vaccinated.

3120. But in making a larger district do you not do away with the advantage which you had before, of a mother knowing pretty well the source from which the lymph was taken, knowing the parents of the child, or having some knowledge of some kind about them?—I think not; that power of a parent to know something about the individual would be chiefly in the country, and would hardly exist, I should think, in London.

3121. Have the parents who take their children to be vaccinated the same power which the richer classes and the better-to-do classes have in being insured as to having the lymph taken from a healthy child upon your system?—I should think better. I can conceive nothing better than our system of public stational vaccination at its best. There are two or three matters in this country in which the poor are better provided than the rich, and I think that vaccination is one of them.

3122. And you consider that that arises from the greater number of children who are brought to the station weekly?—Yes.

3123. Does it also arise from the vaccination taking place directly from the child's arm, instead of the lymph being carried in other ways?—Yes.

3124. Does your new system answer equally

as well for the country as it does for the town?—I think that we have made considerable improvements in the vaccination of the country. Under the old system the vaccination arrangements in the country existed only on paper, and could not be carried into effect; under contracts which had been made in conformity with the law, the vaccinator was supposed to attend many times oftener, perhaps, than the births in his district, so that if every child in his district was vaccinated by him, he would get a fraction of a child at each attendance; and in some cases his contract obliged him to be in two or three different places at the same hour on the same day, a feat not easy to accomplish, except on paper.

3125. Have you found it difficult to carry out a good system of vaccination in the country upon the plan which you have laid down?—We have improved upon former arrangements; but, where there are sparse populations, we of course cannot get as good a system as we can get in towns; but we have improved.

3126. Can you there get arm-to-arm vaccination?—Yes, generally; there are cases where the population is so scattered, that a station would be an absurdity; and here the public vaccinator, once or twice a year, when he has one or two children well vaccinated, will take one of them with him round in his carriage from house to house, and vaccinate the scattered children as he goes about.

3127. Do you consider since you have had your new system in full operation, that there are a greater number of cases of successful vaccination than there were formerly?—We have not our statistics yet, but I cannot have a doubt of it. The system is not yet in full operation, though it is gradually getting into operation, and indeed is far advanced even; but in London it is not yet universally in operation.

3128. Can you give now any statistics as to the rate of mortality in large towns?—I will read a dozen lines from my report of 1858 upon the mortality of children: in referring to the very high death-rates of children in large towns, I was particularly speaking of the mortality by diseases which are not epidemic. I had previously discussed measles, hooping-cough, and scarlet fever, and then I came to the convulsive, and nervous, and diarrhoeal, and respiratory diseases of children: diseases of which the conjoint operation was, I observed, to destroy in every year about 72,000 children, and thus to occasion about one-sixth part of the mortality of England. These are eminently the diseases of towns, especially of great manufacturing towns. I pointed out that the average death-rate produced by those disorders in three of the healthiest rural districts of England taken together (for those districts are small) had been 925 per 100,000; but that in the unhealthiest district of England it had been 6,895; and in answer to the question, Why are those non-infectious infantine complaints seven times as fatal in one district as in another? here is the conclusion to which I came: "I believe that the vast range of that aggregate mortality in different districts of England is due to the varying prevalence of two local causes; first, to difference of degree in common sanitary defects of residence; some places abounding more than others in the foul air and foul water of undrained, unpaved, unscavenged, unwashed, unlighted, unventilated localities

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localities and houses; and, secondly, to occupational differences amongst the inhabitants, there being certain large towns where women are greatly engaged in branches of industry away from homes, where, consequently, these homes are ill kept, where the children are little looked after, and where infants who should be at the breast are improperly fed or starved, or have their cries of hunger and distress quieted by those various fatal opiates which are in such request at the centres of our manufacturing industry." The next year we made extensive local inquiries, the results of which fully substantiated this belief with regard to the towns of highest infantine mortality. Some years afterwards we made similar inquiry amongst agricultural populations as to their infantine mortality, and there likewise we found that the evil essentially depended on the industrial occupation of the women.

3129. Do you know whether in places where textile fabrics are manufactured the mortality is greater than industries of other kinds, such, for instance, as the iron industries, where men are chiefly employed?—Undoubtedly, very largely. To speak of the infantine mortality of a place as increasing without reference to the question whether there had been a change of female industry would be absurd.

3130. Dr. *Lyon Playfair*.] I wish exactly to ascertain your meaning with regard to syphilis. I think that you stated that you would consider it very undesirable that lymph should be taken from a syphilitic child to vaccinate another child?—Assuredly; one of our express instructions to public vaccinators is, that they take lymph only from healthy subjects.

3131. That, I suppose, is derived from a desire to give every security possible in vaccination?—Surely.

3132. But have there not been direct experiments, for instance, by Cullerier, by Taupin, and by Heymann, who have on a tolerably large scale vaccinated healthy children with lymph taken from a syphilitic child?—There have been such experiments on a considerable scale, as I mentioned in my last annual Report.

3133. And these experiments produced a negative result, did they not; that is to say that the syphilis was not communicated through the lymph taken from the syphilitic children?—That was the case.

3134. May not an inexperienced and careless vaccinator sometimes introduce the blood of a syphilitic patient together with the lymph?—Yes, and I think it probable that, if ever syphilis has been conveyed in what could reasonably be called vaccination, it has been by the admixture of blood or pus with the vaccine lymph.

3135. And on that account, and not from believing that syphilis may be communicated by the lymph from the true Jennerian vesicle, you would discountenance the use of any lymph from syphilitic patients?—The admixture is, I think, the essential danger; but I would nevertheless most strongly deprecate any use of the lymph itself, however free from admixture.

3136. Do you know whether such specialists as Acton, and Lee, and Laugston Parker, men who have devoted very much attention to syphilis, have found in their immense practice that the syphilitic cases which they obtain are due at all to vaccination; have not those gentlemen stated their opinions upon this subject?—Yes.

3137. Are they under the impression that

syphilis is produced by vaccination?—Many years ago, after the publication of my quarto volume, Mr. Lee, who is a most accurate and trustworthy person, and for whom his profession generally entertain great respect, thought that he had caught a case of syphilitic invaccination at St. George's Hospital, and summoned his professional friends to look at it as something that for the first time in his life he thought he had found. Within a very short time, however, as soon as the case could be investigated, Mr. Lee satisfied himself that the case was not syphilitic.

3138. Mr. Lee frankly confessed his error afterwards, did he not?—Yes. Quite recently, since the publication of my last report, there has again been a case, after an interval of many years, which the hospital surgeon thought he could recognise as one in which syphilis had been invaccinated, and a great deal of inquiry was made about it; a large number of the studious doctors of London were interested in the case; it was something so scarce to them that there should be a case even of suspicion in the matter, that they were anxious to inquire about it; I do not know that it is necessary to enter upon the discussion of that particular case, because I am quite prepared to say that what has purported to be vaccination, has, in certain cases, communicated syphilis; but in this country hundreds of surgeons and physicians of the largest experience have lived long lives without ever seeing any such case; and where occasionally other practitioners of fair character have believed they could quote a case or two, there, as a general rule, the sources of fallacy have been very considerable. I am however not prepared to say, that in none of them has syphilis been communicated; I would only confess great doubts as to the quality of any operations which had that result.

3139. You are aware that there has been an increase in the number of deaths from syphilis in this country as regards the Registrar General's returns; do you know that the Registrar General has stated in his reports, that this increase is chiefly due to the greater care in recording deaths from syphilis than was formerly the case?—I have no doubt that that would account for a great apparent increase of syphilis.

3140. With reference to the proportions which you mentioned between the vaccinated and the unvaccinated of the population, evidence has been given to the Committee that, speaking roughly, and generally in the weekly returns of deaths by small-pox, nearly as many vaccinated as unvaccinated die; that is to say, that of those who die, about one-half have been vaccinated and one-half have not been vaccinated; does that show a similar tendency to the disease and to mortality from the disease, in vaccinated as in unvaccinated persons?—Certainly not; I do not know whether the fact on examination would turn out to be as stated; I think one must not too hastily assume the premiss, but it would not prove any such thing as pretended; the vaccinated, in proportion to the unprotected, being as 95 to 2½.

3141. May it be taken as 95 to 5?—When you come to the really grown-up population, leaving children out of the question, I suppose that at the utmost one and a-half or one per cent. would be as much as there could be of unprotected persons, who had not been either vaccinated nor had small-pox.

3142. We will take it as 95 to 5; last week there

there were 205 deaths, I think, from small-pox; if that ratio of 95 to 5 exists in the general population, would not it follow that there ought to have been 100 deaths of unvaccinated persons, and 1,900 deaths of vaccinated persons, if the mortality had been equal among the two proportions?—No doubt.

3143. As 5 is to 95, so is 100 to 1,900 in the proportion of mortality?—Quite so.

3144. Therefore, the mere fact of there being one-half of the deaths amongst the vaccinated, and one-half amongst the unvaccinated, does not show any similar mortality amongst these two classes of the population, does it?—Certainly not.

3145. Or even any similarity of cases, because I think, it has been stated that although the deaths are not so numerous, the cases of small-pox were as numerous amongst the vaccinated as amongst the unvaccinated?—It would not show that as far as I have followed your figures.

3146. Sir *Smith Child.*] Have you read the evidence of Mr. George Gibbs?—Yes, I have read it.

3147. At Question 1660, page 16, Mr. Gibbs states he believes, as far as he can judge, that consumption might be induced by vaccination; are you of that opinion?—Mr. Gibbs is not, I believe, a member of the medical profession, and I am going to appeal to an equally non-professional judgment against him; I suspect that every Member of the Committee can answer that question as well as any skilled witness.

3148. He referred to Villemin, and to some lectures by Dr. Wilson Fox, which he said confirmed his statement, and he said that "Dr. Wilson Fox has published a lecture in which there is a table in which he gives the results of the inoculation of certain things upon the bodies of animals on which he experimented; in that list is vaccine lymph and the results (which he calls 'the successful results') in the case of vaccine lymph are as great, and apparently greater, than those which he obtained from the inoculation of tuberculous matter itself;" have you thought it worth while to ascertain whether Dr. Wilson Fox admitted that or not?—Yes; Dr. Wilson Fox quite admits it, but in a very different sense from that in which it is put here, and with a context which is here not quoted.

3149. Have you seen Dr. Wilson Fox since that evidence was given?—No; but I have read Dr. Wilson Fox's book, and I know his experiments very well; he was in intimate colleguely communication with some of us who were doing similar experiments at my office. The reference to Dr. Fox's experiments requires the very important qualification, that what vaccine lymph here does, a thousand other things will do; it is quite true that inoculating, not a human being, but a rabbit or a guinea-pig, with vaccine lymph, may give it tubercle; but inoculating it with sawdust or with gunpowder, on inoculating it by running a bit of thread through the skin may equally give it tubercle; it is a peculiarity of the animal, and a singularly-strange one, that a mere slight wound may give it tubercle.

3150. I merely asked you, because Dr. Wilson Fox being a friend of mine, I thought fit to write to him to see whether he agreed with this; he says, "In fact, if one can deny anything, I should do so most positively, that vaccination, as such, has ever been known to produce tubercle in any branch of the animal kingdom;" is that what you would suppose to be Dr. Wilson Fox's opinion?

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—Yes, that is exactly what I should know to be his meaning; Mr. Gibbs's quotation is an entire misapplication of Dr. Fox's experiments.

3151. In your evidence the other day at Question 3004, you speak of consumption being more prevalent in certain districts; you say, "In districts where the women practise certain industries that the men do not practise, the women will have twice as high a mortality as the men;" and you instance several places; but those industries were not identical, they were of different kinds, were they not?—Yes.

3152. What employments were they that you referred to?—I referred particularly to Berkhamstead and Leighton Buzzard, where there is extensive female employment in straw plaiting; to Newport Pagnell and Towcester, where there is extensive female employment in lace making; to Yeovil, where there is extensive female, with some male employment, in glove making; to Leek, Congleton, and Macclesfield, where there is extensive employment (more female than male) in silk work. In connexion with the excesses of lung-disease among the adult male population of certain industrial districts, I referred to Redruth, Penzance, Wolstanton, Stoke-on-Trent, Wolverhampton, Birmingham, Aston, Sheffield, Reeth, Alston, Abergavenny, and Merthyr Tydvil, as places which have various metallic industries; industries of miners, metal-forgers, cutlers, and potters.

3153. I only asked whether there was anything special in the manufacture itself that produces the disease?—The influences were various, but in each case industrial.

3154. You spoke about the vaccination marks being almost a certain indication of the operation having been successfully performed; might there not be marks in after life which might have resulted from inflammatory action (a wound for instance), even if the cow-pox itself had not properly taken?—I think not; the vaccination mark is so very characteristic that it can hardly be imitated by anything else. I would not say that there never, in any single case, could be an error, but with skilled observers an error is in the utmost degree unlikely.

3155. Should you say that vaccination is more general in the country than in towns?—It varies very much in different districts. There are some country districts that are thoroughly vaccinated, and there are some town districts that are thoroughly vaccinated. I have never made a comparison between them broadly, as to the difference between town and country.

3156. It has been stated that many of the persons who are afflicted with the small-pox in the hospitals have been previously vaccinated. I suppose that small-pox is more contagious as regards certain individuals, than as regards others, is it not?—Certainly.

3157. I have heard of persons having it three times, for example?—It is so.

3158. I suppose that arises from an idiosyncrasy in the individual which renders him more susceptible?—Particular susceptibility to certain diseases runs in certain families; some have a particular susceptibility to scarlatina; others to small-pox infection; others to other infections.

3159. Then persons having that hereditary susceptibility, even when vaccinated, would be more likely to take small-pox than other persons, would they not?—Yes.

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3160. You spoke of Cardiff, but you did not mention the age of the children when you spoke of 700 children in four streets; what was the age?—I have not a note of the ages.

3161. At what ages are children most susceptible to small-pox?—We do not know in unvaccinated persons any differences of susceptibility according to age; when small-pox attacks an unprotected population after a lapse of years, it seizes all who come in the way of the contagion who have not previously had the disease. Supposing there is an island, and it has not had a small-pox epidemic for 50 years, the epidemic when it comes, will take all up to the age of 50. I have a reference to a paper of Sir James Simpson's, on vaccination, where he speaks of an epidemic of small-pox in one of the Caroline Islands, which killed 3,000 out of a population of 5,000; of course I need not say that they were not all children. In Europe generally, small-pox is in so great part an infantine disease for the reason that its contagion is always present. An unprotected person in London, for instance, cannot generally get far on in life without being in the way of contagion of small-pox, and he catches it at the first opportunity.

3162. I think you mentioned that it is not impossible that persons may have cow-pox and small-pox concurrently?—Under the conditions that I have described, that is so.

3163. I suppose no experiment has ever been tried of mixing the virus of two diseases together?—None that I know of.

3164. You mentioned, did you not, that if a person had been successfully vaccinated when a child, and successfully vaccinated at puberty, it would generally act as a security?—Yes. I think that for the very large majority of persons, one vaccination in infancy thoroughly done (what we call a first-rate vaccination) gives security against an attack of small-pox for the whole of life; I think that applies to the very large majority of persons, but I cannot give the exact numbers. There will remain, however, a certain proportion who as they get to puberty become liable to small-pox, and require to have that re-nascent susceptibility extinguished by a fresh vaccination.

3165. Then, I presume, if vaccination has been successfully performed in childhood, and at puberty, and the person is re-vaccinated, and does not take cow-pox, he may be considered equally secure as if he had taken it?—One must not too hastily take it so. Different vaccinators are differently successful in their attempts at re-vaccination, and evidence is not rare, that one re-vaccinator may succeed where others have not succeeded.

3166. I think you mentioned that one of the difficulties had been in obtaining proper vaccine matter?—I perhaps failed to make my meaning on that point clear. By "proper" vaccine matter, I do not here mean the opposite of injurious vaccine matter; I mean the opposite of inefficient or imperfect vaccine matter. Lymph for vaccination ought only to be taken from the most perfectly-developed vesicles; from model vesicles; and of course a man will not get model vesicles unless he has plenty of vaccinated arms to choose from. That has been the nature of the difficulty.

3167. Then, would it not be desirable to have more frequent recourse to the origin, to the cow-pox itself?—There are differences of opinion as to that. Certainly my colleagues and I, considering what we see at our own lymph-supplying stations, do not see the necessity for reverting to

the cow. A vaccinator who goes on for a long while at a small station, will, however, certainly from time to time, want to renew and to change his stock of lymph. A vaccinator going on at a small station will want to have recourse to a sort of cow, but it need not be the cow absolute; so long as he applies to a large station he can generally supply his want, and that is equivalent to applying to the original source. We, at our large stations, do not see that the lymph gives any signs of diminished efficiency, but our general charge to district vaccinators all over the country is this: "Scrupulously observe in your inspections every sign which tests the efficiency or purity of your lymph; note any case wherein the vaccine vesicle is unduly hastened or otherwise irregular in its development, or wherein any undue local irritation arises; and if similar results ensue in other cases vaccinated with the same lymph, desist at once from employing it. If from any cause your supply of lymph ceases, or becomes unsuitable for further use, take immediate measures for obtaining a new supply." That is the universal instruction to public vaccinators. Then, when in case of need they apply to us for lymph, we at present do not get our supplies of lymph from the cow; we have not yet felt any occasion to do so. We receive daily supplies of lymph from our larger stations, which are always under observation as regards the quality of their current vaccination, and from these supplies we send to each applicant a new stock to start with. If the vaccinator has a large station, so that he can always choose his cases well, that start of lymph may keep him an indefinite time, perhaps many years, before he wants a fresh supply; but if he has a small station, where he cannot select his subject, he will comparatively soon come back to us for a fresh supply.

3168. Then, practically, the lymph, after a long series of transmissions, does not deteriorate or become weakened?—Probably not in a first-class station, with a first-class vaccinator. It would be perfectly easy to us at any time, if we thought it necessary, to start all our central stations anew with fresh cow-lymph.

3169. You were asked about children having diseases which will be incident to vaccination, and you instanced erysipelas; could pyæmia be induced by vaccination?—I can only say that I never knew of such a case.

3170. You are probably aware that the King of Bavaria was said to have died from the scratch of a pin?—Exactly.

3171. Mr. Muntz.] Do you consider the present epidemic indigenous, or imported by the French emigrants who came over last summer?—I believe that, as it happened, the French emigrants had a good deal to do with starting it, but still we might have had a very large epidemic of small-pox without any French emigration; according to the general cycle of epidemics, an epidemic was due.

3172. But I think that there was no epidemic at the time when the French emigrants came over here last August?—No.

3173. What is the shortest time within which syphilis will show itself, so far as your experience goes?—The local signs of syphilitic inoculation would generally appear in from three to five weeks, and the constitutional signs considerably later. I could not, without reference to books, tell you the shortest time in which constitutional symptoms

symptoms have ever been known to show themselves.

3174. It is not under 20 days, I think?—Not under 20 days, nor twice 20 days, to the best of my belief; I believe that three times 20 days from the date of inoculation would be an unusually early date, and that even four times 20 would be rather within than beyond the average number.

3175. With regard to the marks of vaccination, may not a person be properly vaccinated in his childhood, and the marks be quite perceptible in after years, and still may he not lose them in later life?—At very advanced life scars of all sorts have weakened themselves, but, certainly, for a long way on in life we can trace vaccination marks very perfectly; I cannot myself answer on a large scale for the scars of very advanced years.

3176. You are aware, of course, of a very strong feeling throughout the country (I do not say from what cause), on the part of a great number of the working classes particularly, that vaccination brings impurity to the blood, and, in fact, that impurities are introduced, and other diseases are introduced, by vaccination; would not that be modified to a great extent, if not done away with altogether, if we adopted the Belgian system of vaccinating from the heifer?—In my last report I discussed that question, and found that the system to which you refer involves very serious difficulties.

3177. Mr. *Jacob Bright*.] You recommend re-vaccination at the age of puberty, I think?—I do.

3178. On what grounds do you recommend it at that age?—On the ground that a certain proportion of previously vaccinated people at that time have become again in some degree susceptible of small-pox infection.

3179. But do you base that upon figures and upon facts which have been ascertained?—Yes; on a very large number of facts which are contained in one of the Papers which I laid before the Committee at their last meeting, extracted from my Report of 1857.

3180. That Report was written 14 years ago, was it not?—Yes.

3181. Are you aware that it has been stated in evidence before this Committee, that the figures of the Registrar General would not, in fact, justify the notion that puberty was the best age for re-vaccination?—It is hardly to the Registrar General's office that I should look for the kind of information which would assist in forming a judgment as to that point; the facts on which judgment has to be formed do not fall within cognisance of his office.

3182. Are you aware that his figures are said to show that the liability to small-pox diminishes as age advances?—Very much so, because people have had it.

3183. Does liability to small-pox diminish amongst vaccinated persons with age?—I am not very sure.

3184. Would a boy of 18 be less liable to have small-pox than one of 10?—Do you mean whether the re-susceptibility which takes place at puberty, if it occurs, is more or less temporary, and whether that re-susceptibility tends to diminish with advancing years.

3185. What I really wish to know is, whether those who have paid attention to this question can tell if liability to small-pox diminishes with each year of life?—In the unvaccinated, certainly not.

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3186. But in the vaccinated?—Not that I am aware of. That is to say, if re-susceptibility is developed at puberty, and not (as it ought to be) extinguished by re-vaccination, I am not aware that such re-susceptibility becomes extinct by mere lapse of time.

3187. You are not aware that this liability does diminish?—I am not. It is quite certain that the larger number of our cases of post-vaccinal small-pox will be at ages soon after puberty; just as the larger number of our cases of ordinary small-pox are at infantine ages; but I cannot say that the gradually decreasing quantities of post-vaccinal small-pox in later and later periods of life, does not depend on the same sort of influence that makes ordinary small-pox comparatively rare after childhood, namely, that the population has already lost its susceptible fractions, that the once susceptible people have now already had the disease.

3188. You may not have noticed that it was positively stated by Mr. Gibbs, that according to the figures of the Registrar General what you now state is not true; that is to say, that a person at puberty was not more liable to small-pox than a person of half that age?—I have not given particular attention to the Registrar General's figures on this subject.

3189. When the public are told that they should re-vaccinate at puberty, I am anxious, of course, to know on what ground they are advised to re-vaccinate at that particular age; if I understand you aright, you say that the liability to small-pox is equal at any time from birth up to 20, or it may be up to 30 years of age, and therefore it would seem to me that re-vaccination would be just as wise at seven, or at 10, or at five years of age, as at puberty; that probably is not your opinion?—Most decidedly I am not of the opinion that re-vaccination at seven or eight years of age would be desirable.

3190. Why not?—Because the experience of experts in small-pox is that those earlier years of life do not give any important quantity of cases of post-vaccinal small-pox.

3191. Then, in your opinion, of course as age increases post-vaccinal small-pox increases also?—That I do not say; what I say is, that with changes that take place at or about puberty, the protection which was given at infancy is in a certain proportion of persons weakened, that at that time a new susceptibility is to some extent created; but whether that new susceptibility, when it has arisen, spontaneously diminishes with advancing years, or only diminishes in proportion as the subjects of it contract small-pox, I am not able positively to say.

3192. I think you stated that, in your own opinion, 97½ per cent. of the population of London are vaccinated?—At the age at which recruits are taken, and judging by the returns of 1866-8, the protected proportion is, I believe, about 97½, but this number includes the protected by previous small-pox, as well as the protected by vaccination.

3193. And you arrive at that opinion from the examination of those schools, do you not?—The schools and recruits.

3194. But compulsory vaccination has only been in vogue for some 17 years, has it?—Since 1853.

3195. Then the greater proportion of people living were born, I presume, before vaccination was compulsory; could you suppose it possible that such an enormous proportion as 97½ per cent.

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of the whole population are vaccinated?—With regard to advanced periods of life it is impossible to say how many are protected by vaccination, and how many by previous small-pox; but, of grown-up persons, nearly all have acquired protection in one way or the other. In London, at the recruiting age, only about $2\frac{3}{4}$ per cent. of that class of the population from which recruits are taken appear to be unprotected; and this already small proportion must diminish with every succeeding year of life. When I was speaking before on these points, in their relation to the Small-pox Hospital, I was obliged to say that very different statistics would exist at different ages; there would be one proportion of vaccinated and unvaccinated applying to London children; there would be another proportion applying to recruits; then when you come to people born before the year 1853, far back in the century, different statistics would still obtain; but the difference would be, not that there would be a larger proportion of unprotected people, but that the protection would be in a larger proportion by small-pox, and in a lesser proportion by vaccination, and extremely few people resident in London would have reached 30 years of age unvaccinated without having had small-pox.

3196. Do you think that there may be $97\frac{1}{2}$ per cent. of the population of London protected?—Yes. Excluding infants, I should suppose that statement would be considerably within the mark.

3197. Do you know how many there are protected in Ireland?—I do not.

3198. You may have noticed that it has been stated in evidence, that the proportion was 65 per cent. or thereabouts; but you know that there have been great boasts with regard to the condition of Ireland, owing to the very general and good vaccination there?—Sometimes premature boasts are made in those matters, and I observed, in referring to the Irish statistics, that it would be quite rash and wrong to attribute to Ireland that it had already got rid of small-pox; no doubt there will be plenty more small-pox in Ireland, but nothing like the former number of cases.

3199. Certainly, if your notion be correct about the $97\frac{1}{2}$ per cent., you cannot have a very high opinion of the accuracy of the Ministers of the Crown, in introducing those Acts of Parliament into the House of Commons?—Even Ministers of the Crown may sometimes make a wrong quotation, or stumble at a figure, or say a wrong word.

3200. Can you tell me who Dr. Ballard is?—Dr. Ballard is the officer of health of the parish of Islington, a gentleman very much regarded by those who know him, and of whom I personally have a very high opinion.

3201. An opinion of his is stated, in answer to Question 1589, by Mr. Gibbs, that whatever may be the advantage of vaccination it has its dangers; are you aware that Dr. Ballard has made that statement?—I do not know whether the book is here, because some of those quotations require verification.

3202. It is quoted to show that there is some danger in the vaccine operation?—I have not Dr. Ballard's book here, but I have reason to believe that this is not a complete quotation of what Dr. Ballard states.

3203. You are aware, of course, of the popular opinion, in some parts of England at any rate, of the dangers attending vaccination; is it your

opinion that sometimes a child may be killed by vaccination, or that sometimes it may be seriously injured, however rarely that may happen?—I have stated in the earlier part of my evidence, that among the very remote possibilities of vaccination there are such as your question indicates; but when you speak of fears entertained in different parts of England as to the detriment which may be caused by vaccination, I should say that such fears are scarcely entertained, except in proportion as pains are taken to exaggerate the occasional mischances of vaccination, and to depreciate its merits. When there is an organisation to distribute among ill-informed people such statements as some of these publications (which I hold in my hand) contain; when one reads that "at Shorncliffe, in 1866, 13 soldiers died in a few days after re-vaccination," and that "they were literally rotten," what can one expect?

3204. Mr. Candlish.] Whose statement is that?—It is out of a thing called "Medical Freedom."

3205. Mr. Jacob Bright.] No doubt there are great exaggerations?—But those are not exaggerations; those are lies.

3206. Those, probably, are lies; I have no doubt that there are both exaggerations and lies, but to believe that this danger is so extremely remote as you say it is, it would be necessary that we should entirely disbelieve those cases which have been brought before us, which have been attested before magistrates, in which the parents, if not with great medical knowledge, at least with ordinary common sense, believe that their children have been seriously injured or killed; is not that the necessary conclusion at which we must arrive?—It is not necessary altogether to disbelieve those stories. It has been my duty to look carefully over them; sometimes I see true stories; sometimes even (though this is comparatively of extreme rarity) true to the full extent of the parents' conclusions in the matter; but very generally what I see is a true statement as regards the phenomena presented by the child, but an utterly untrue inference as to the cause of the phenomena. Very recently, a gentleman, who I daresay did not intend at all to misrepresent the cases which he stated here, brought before the Committee several cases, where he believed that mischief had been done by vaccination, and some of which had, I believe, been sworn to; I refer to Mr. Rothery's evidence. Now, Mr. Rothery, when he mentioned those cases, did not, so far as I know, mention one particular case, the only one of which my office had been made cognisant, and where we had been able to ascertain the facts of the case. We inquired into the one case which he brought under our notice, such a one as might have been among his selected cases if we had not inquired into it, and it utterly broke down. This case, which he in the newspapers represented to be a most deplorable instance of the evil consequences of vaccination, and about which happily he also wrote to Mr. Göschen, who communicated the letter to us, was, in the first place, a very trifling and temporary infantine ailment; and, in the second place, had no more proved connexion with vaccination than with any other circumstance of the child's life.

3207. Mr. Candlish.] Was that the case where it was said that six children died from being vaccinated from one child?—Not that case. I wish I had had an opportunity of inquiring into that.

3208. Mr.

3208. Mr. *Jacob Bright*.] Did you hear it stated that Monsieur Ricord had altered his opinion with regard to the possibility of giving syphilis by vaccination; you are aware probably that he has changed his view upon that subject?—I am quite aware that Professor Ricord has of late years changed his views generally on the subject of syphilis. There has been in the course of the last dozen years a very great progress in our knowledge of syphilis, revolutionising a large part of that branch of medicine, and M. Ricord (to whom personally much of that great progress is due) has changed his views accordingly.

3209. I think I understand from your evidence that you have changed your view upon that question?—I also have learned, I am happy to say, something about syphilis in the last 14 years; 14 years ago it was believed that the only inoculable form of syphilis was the primary sore, but it is now known, and has for several years been known, that such is not the case.

3210. At any rate it would seem that on that very important subject (because it will be held to be very important by the public), that those 400 or 500 medical men who gave such positive opinion, were probably mistaken?—Certainly not; it might appear that opinions to which no one attached any value, as mere speculative opinions, were perhaps wrong; but what I insist upon, as the essence of that great body of evidence, is, that men in the largest practice, men with unlimited opportunity of seeing everything that can be seen in medicine and surgery, had never seen a case in which syphilis was communicated by vaccination. I cannot conceive that hundreds of physicians and surgeons of hospitals throughout the country, one after the other, would severally reply, with regard to any practically important danger about which they were questioned, “I have never in my practice seen an illustration of it.”

3211. I suppose you remember, that even at the time when this large number of medical men gave those opinions, there was a certain minority who thought they had seen it?—There was a very small minority who believed that they had seen it.

3212. It may be, that that small minority was in the right about the matter, may it not?—There was one of the gentlemen whose opinion at that time much impressed me, namely, Mr. Jonathan Hutchinson. Him I well knew to be an extremely accurate person, and to have very large opportunities of observation. His answer was, “I believe that I have seen four or five instances in which local syphilitic affections (in some cases followed by general infection) were induced by vaccination performed under ordinary circum-

stances, and by duly qualified men.” Now I attached a great deal of importance to that statement; though, while it was extremely exceptional, I considered it substantially outweighed by the other evidence; but last summer I applied again to Mr. Hutchinson on this subject; Mr. Hutchinson having meanwhile had 13 years’ additional experience on a very large scale. There would be no difference of opinion in the medical profession as to the peculiar largeness of the opportunities which Mr. Hutchinson has had of forming a good opinion upon the subject, by seeing even the rarest illustrations that could be seen. In answer to my question last year, he wrote back as follows: “In the 13 years and upwards, which have passed since I made the communication which is given at page 73 of the ‘Papers relating to the History and Practice of Vaccination,’ I have not met with a single case, either at the Hospital for Diseases of the Skin, or elsewhere, in which I have had any reason to believe or suspect that syphilitic disease had been communicated by vaccination. The origin of the diseases which have come under my observation among the children at the Hospital for Skin-Diseases has, of late years especially, been with me an object of particular investigation. I doubt also whether, had I investigated the cases to which I have referred in the ‘Papers, &c.,’ with my present knowledge and experience, I should have formed altogether the opinion respecting their nature or origin therein expressed.”

3213. Do you know who Dr. Lancereau is?—Yes.

3214. Is he an eminent man?—He is the author of a well-known book (substantially, I believe, a compilation) on syphilis.

3215. Does he not, referring to the causes of syphilis, give vaccination as one of the causes; does he not give cases where syphilis has been transmitted by vaccination?—He does not, I believe, give any case of his own, but he quotes the often-quoted cases to which I have referred. In my last year’s report, I myself did as Dr. Lancereau does, that is to say, referred to several cases on the Continent of Europe, where what purported to be vaccination has given syphilis; I have to day repeatedly referred to those cases.

3216. That is to say, where the medical man was not very careful or very skilful in selecting what you call the correct lymph?—In a case into which I was able to inquire particularly, the perpetrator was not a medical man at all, but was, I believe, a servant or porter of the establishment in which the so-called vaccination was performed.

Mr.
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F.R.S.
13 March
1871.

Friday, 21st April 1871.

MEMBERS PRESENT:

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.

Mr. William Edward Forster.
Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. JOHN SIMON, F.R.S., re-called; and further Examined.

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3217. Mr. Jacob Bright.] WITH reference to re-vaccination, do not the figures of the Registrar General rather discountenance your views with regard to re-vaccination?—I believe I said, and I may still say, that I have not looked at the Registrar General's figures in that point of view; I should not expect to get information there which would assist me.

3218. I think you have stated that the figures of the Registrar General would not assist an inquiry of that sort: but if the figures of the Registrar General do not furnish the basis for opinions upon the subject, will you tell me where you would go for such a basis?—The final figures of the Registrar General, not those of a particular week, but on a large scale extending over many years, would be one of several sorts of material which I should use; but in my Report of 14 years ago, and in one of the extracts from that report which are before the Committee, I have given in detail much of the evidence upon which my views as to re-vaccination rest. There, in the third section, headed "Small-pox since the use of Vaccination," I trace, as matter of history, how evidence gradually arose of the partial instability of infantine vaccination after some years, and there also I state the reasons which appeared to me to be in the statistics, as till then collected, for thinking that the re-development of susceptibility to small-pox takes place particularly about puberty.

3219. Are you aware that in the Report of the Registrar General of the 13th of February, he states that the danger of dying from small-pox diminishes rapidly as age advances, which could not be the case if the effect of vaccination wore out with time?—I have no doubt that it does diminish very rapidly. The deaths of the population at early ages are deaths of unvaccinated persons. The deaths of the elder persons are, as a rule, I suppose, the deaths of persons who have been imperfectly vaccinated and have had a relapse of susceptibility at puberty or thereabouts.

3220. Then you do not think that the danger diminishes with both vaccinated and unvaccinated persons as they grow older?—I have no reason to suppose that persons merely by growing older become less liable to contract small-pox, if exposed for the first time to its contagion; but with small-

pox as with most other diseases, there is a different rate of mortality to persons attacked at different periods of life. The mortality of unvaccinated infants attacked with small-pox in proportion to the attacks is very high; but at and after 30, the mortality is still higher in proportion to the attacks of natural small-pox, and after 60 hardly any escape. I have no reason to suppose that the relapsed liability to small-pox in certain vaccinated persons declines with efflux of time.

3221. When did you first form the theory that re-vaccination at puberty was a necessary thing?—I can hardly say; but I think probably at the time when I first went very carefully through the evidence which had grown up on the subject, and this was in 1857 when I compiled my Report for the use of Parliament.

3222. Is it a personal view, or is it a view which is entertained by the profession?—I believe it to be a general view.

3223. What evidence have you that it is a general view?—Conversation with persons who are informed upon the subject, and a general acquaintance with medical literature. I have taken no census of opinion upon the subject.

3224. Have there been any publications by medical men in support of that theory?—Very recently, to the best of my recollection, there was the recommendation of the College of Physicians on the subject, substantially agreeing with what I have said, but I quote from memory.

3225. Have you often come in contact with cases of persons who have been injured by re-vaccination?—I cannot say that I have often come into contact with such cases.

3226. Your present office would not bring you into contact with such cases, I presume?—No.

3227. You stated, did you not, in your former evidence, that there were cases where the marks of vaccination disappeared?—I think probably I must have said that I could conceive the vanishing of vaccination marks in extreme age in a small proportion of cases.

3228. I think that it has been stated in evidence, that in the case of a patient taken to the hospital attacked with confluent small-pox, the vaccination mark would often not be perceptible; is that so?—I think not so.

3229. Then you disagree with that statement?—
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Yes; not on my own authority, but on authority which I would submit to the Committee is the very best which can be obtained on the subject, that of Mr. Marson. There is no such evidence, I believe, to be got in Europe as Mr. Marson can give to the Committee on that point, and others of the same sort.

3230. But if marks do sometimes disappear, and if in the cases of persons taken to the hospital with confluent small-pox, the marks are not discernible, of course the figures which the hospitals give would be disturbed by those facts?—Certainly, so far as those facts exist.

3231. Can you tell me why we have no longer the accounts from the hospitals in London of so many persons with small-pox vaccinated, and so many not vaccinated, and why they have discontinued to give those accounts?—I have no knowledge; but I can very easily conceive that their authors may have given them up, as finding them to be fallacious; namely, that many patients were called vaccinated who really were not vaccinated, or who had been vaccinated too late for any useful purpose.

3232. In either case, the figures being given up because they are fallacious, would it not seem absurd to draw any inferences whatever from those which we have already had?—I should myself certainly refuse to draw any conclusion from statistics extemporised in a hurry during the extreme pressure of an epidemic. I should wait till they could be carefully prepared, till I had the whole story before me. I do not like to draw conclusions from a little bit of a story.

3233. We have had evidence that the infant mortality of the country has of late years increased, and I think that you endeavour to account for that by showing that a much larger proportion of the people live in towns now than in the country; but, if that be so, I suppose that you will admit that there are some very powerful influences on the side of health and life within the last 25 years; for example, you are aware that wages have increased in many cases 50 per cent.?—If this matter is to be rightly judged, it must be judged in pieces, and I am quite unable to speak of England as a whole for any useful purpose; but I think it very probable that, taking in lump, as one population, the children of England and Wales under five years of age, a larger proportion of them would die annually now than died 30 years ago. I do not positively state this, for I have not got the facts: the Registrar General will, I dare say, lay them before the Committee. But assuming the increase, I think that its essential causes would be found to be the development of manufactures, the increase of women's industries particularly, and the very large immigration from country districts into towns. These influences have been operating on a very large scale, and, unless counterbalanced, would undoubtedly have affected the lump-statistics of England and Wales in a way to give the appearance of an increasing infantine death-rate, and would sufficiently account for a large lump-increase.

3234. At any rate, are you aware that there has been a great advance of wages in the country?—I am not sufficiently conversant with wage statistics to say that of my own knowledge.

3235. Are you not aware that the improved arrangements of the country, such as cheaper food, and soap to wash themselves with, and better houses, have very much improved the condition of the people?—I speak with some hesitation upon those subjects.

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3236. Will you tell me whether the improved condition of the towns of the country, in the way of draining, and wider streets, and so on, has not tended to lessen disease, and to make epidemics less numerous?—I was very anxious to put before Parliament, three or four years ago, the evidence on that subject, and such evidence as I could get is in my Ninth Report. The quantity of population respecting which I could decisively compare past and present sanitary circumstances was very small: only of about 600,000 persons. It was only a still smaller case that I was able to put before Parliament as a case of definite sanitary improvement; but in an indefinite way the sanitary condition of towns has improved, I believe, during the last 30 years.

3237. Is it not likely to have diminished epidemics, at any rate?—I think it is likely to have diminished some epidemics.

3238. But you do not think that it has had any effect with regard to small-pox?—Certainly not any appreciable effect; and as regards some epidemics, I greatly doubt whether the unwholesome circumstances which promote their spread have not rather increased than diminished. Take, for instance, the circumstances that favour the spread of measles, of scarlet fever, of whooping-cough; in proportion as you get people gathered into towns, those diseases will be better helped to spread by contagion. In proportion as people are gathered together thickly instead of thinly, diseases which spread by contagion will spread more and more easily.

3239. Have we had many small-pox epidemics in this century so serious as the present one?—None, to my knowledge, since there have been registration returns, except perhaps that of 1838-40; and I doubt whether even that epidemic was quite as severe in London as the present one.

3240. When had we the last serious epidemic of small-pox in this country?—From 1863 to 1865 inclusive; that is to say, having its middle year in 1864, when the small-pox deaths of England and Wales were 7,684.

3241. Was that a serious epidemic?—England had a serious epidemic.

3242. But not so serious as the present one?—To the best of my belief, not nearly so.

3243. How would that epidemic of 1864 compare with any previous small-pox epidemics of this century?—The largest epidemic of which I have record in my memorandum, giving the results of the registration experience of the country, was in the year 1838, when the deaths were 16,268 for England and Wales; in 1839 they were 9,131; in 1840 they were 10,434; in 1841 they were 6,368. There was evidently a very great epidemic; much greater than that which occurred in the years 1863-65.

3244. Greater than that in 1863-64?—Considerably.

3245. But not so great as the present one?—Not, to the best of my belief, quite so great in London as the present one; but what the final outcome of this epidemic may be as regards England and Wales in the total, I am not in a position at present to say. I know that in London this has been a very great epidemic. Its exact relations to the epidemic of 1838-40 cannot yet be measured.

3246. When was vaccination first made compulsory?—The law was passed at the end of the Session of 1853.

3247. What is your opinion as to the general extent

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extent of vaccination before it was made compulsory?—I am afraid that I cannot give you any trustworthy information on that point.

3248. Would vaccination be extensive before that time?—Certainly.

3249. But of course it was much less extensive than at present?—Yes.

3250. Would it not be very much less extensive?—It would, I suppose, be very much less extensive.

3251. If it were not very much less extensive, it would seem to be absurd to have compulsion at all, would it not?—It would be very much less extensive, but *latet error in generalibus*. If the question is as regards infantine vaccination, the difference would be very great indeed: I dare say that the working of the present law has fully doubled infantine vaccination; but if the question is as to what would be the state of the general population at manhood, I should suppose that in 1853 nearly all the population in adult life had either had small-pox or had been vaccinated. There was very little unprotected adult population, I should imagine, at that time.

3252. You stated, did you not, on the last meeting of the Committee, that in your opinion 97½ per cent. of the population were vaccinated?—My rough estimate, for the purpose of comparison with the practice of the Small-pox Hospital, was that, of the London population at ages corresponding to the practice of that hospital, about 2¾ per cent. were unprotected; but the protected class includes those who have survived small-pox, as well as those who have been more or less protected by vaccination. Infants are not included.

3253. Then you state that 97½ per cent. of the people are vaccinated, and you state at the same time that we are now in the midst of the most serious small-pox epidemic of this century?—I believe so.

3254. Do you think that those facts (as you believe them to be) are likely to strengthen the opinion of the country in favour of vaccination?—Perhaps I did not understand your last question quite correctly. I did not mean that this was the most serious epidemic of the whole century, but possibly the most serious since the registration system began, which was in 1838. I have registration statistics here going back to 1838; but we have no such statistics before that date; and there may have been epidemics in the first 37 years of this century much more fatal than the present one.

3255. Then you state that 97½ per cent. of the people are vaccinated, and that we are now in the midst of the most serious small-pox epidemic that we have had since registration?—My statement (which would apply to the main bulk of the population of London) was, that probably about 97½ per cent. are more or less protected; and I believe that London is in the midst of the most serious epidemic, it has had for the time you mention, or at least, certainly, since the great epidemic of 1838–40.

3256. You have some remarkable statements with regard to Holland; are the Committee to understand that there is now a dreadful small-pox epidemic in Holland?—Yes.

3257. How did you gain that information?—Dr. Seaton, who a year ago went for the Medical Department to Holland, on an inquiry into animal vaccination, had established personal communications there, and he recently wrote to a correspondent of his there, Dr. Ballot, who had the means of giving authentic information on the

epidemic. It was from that authentic information that I spoke.

3258. Did you not think it worth while, when in communication with this gentlemen, to get to know something about the condition of Holland with respect to vaccination?—We have some information as to the state of vaccination in Holland.

3259. I thought when you were asked the question on your last examination you said that you at least were not able to give any information upon the subject?—I think I said that I was not able to speak as to the state of the law.

3260. But does it not appear to you that the statements which you made with regard to small-pox in Holland are entirely worthless unless we know at the same time what is the condition of the people as regards vaccination; for instance, if there has been no vaccination those figures would tell very much indeed in favour of your case; but if, on the other hand, vaccination has been universal, they would tell very much against it?—I stated, I think, that the practice in Holland was not to have the children vaccinated until towards the time of their going to school, when they were six or seven years of age.

3261. Are you aware that that is the fact?—So I am informed.

3262. On what authority are you informed of that fact?—On the authority which I have quoted.

3263. And you believe that that is so?—I believe it entirely; otherwise I should not state it to the Committee.

3264. It is a pity that we have not such good information on that point as on the other: even if it were so, still, in order to make the evidence with regard to Holland of any use whatever, we should have to know at what age this small-pox epidemic was affecting the people; whether in the age between birth and vaccination or in the after age, should we not?—I learn from Dr. Seaton that Dr. Ballot says that “the deaths are among young unvaccinated children.”

3265. Is Dr. Ballot in Holland?—Dr. Ballot is in Holland.

3266. We are to take that of course upon the sort of evidence which this Committee has rejected with regard to many other things that have been brought before it; that is, the statement of somebody who is absent, and many things, as you are aware, have been rejected by this Committee on that kind of evidence; is not that so?—Yes.

3267. Will you state whether vaccination is enforced in our own Navy?—I am not so well acquainted with the regulations of the Navy as I am with those of the Army, and I would prefer, with the permission of the Committee, that on that point, if exact information is desired, the medical authorities of the Navy should be examined. I scarcely feel competent to speak as to the rules in force in the Navy; my business is with the civil population.

3268. What led me to ask that question was the evidence that you gave with regard to the ship “Octavia;” it seems of some consequence that we should know what are the regulations in the Navy, if we are to receive that as evidence; is not vaccination universally enforced in the Navy?—I believe that vaccination is required of all men entering the Navy, but I do not profess to speak with a thorough knowledge of that subject. The case of the “Octavia,” as I stated it, did not refer particularly to regulations; for aught that I said, it may not have been by regulations, but

but of free will independent of regulations, that the people were vaccinated. What I spoke of was the protection of vaccination, and not the protection of rule.

3269. How did you obtain the information which you gave us with regard to the ship "Octavia"?—It is extracted from the Naval Medical Reports of 1865 and 1866, which were laid before Parliament.

3270. You told us that there were 21 persons unvaccinated, and that all those took the small-pox; who would be the medical authority for that statement?—The medical officer of the ship, no doubt.

3271. We have had it stated by a medical man before this Committee, that he has seen children who had been vaccinated, and afterwards the marks could not be found; is it possible that this medical man on board this ship may have given us a statement here of unvaccinated persons, many of whom may have been vaccinated?—I will not pretend to limit the possibilities in the matter; but in the practical sense in which the question no doubt is asked, I think it is not in the least degree probable.

3272. I have had put into my hands a note, stating that in the obituary of "The Times" of that date it was stated that John Leslie Gilbey, lieutenant on board the "Octavia," died of small-pox; would you think it likely that the lieutenant himself would be unvaccinated?—It is quite possible; if he died from small-pox, I presume that he was returned among the 21: and if so, I have no reason to doubt that the officer of the ship satisfied himself that even the lieutenant was unvaccinated.

3273. Did you notice the evidence which was given by Mr. Gibbs (Question 1603) with regard to small-pox in France, by which he endeavoured to show that in those parts of France where vaccination had been most attended to, there was most small-pox?—Yes; my attention was drawn to it.

3274. Are you able to show that there is any inaccuracy in this statement?—It seemed to me one of the absurdest misapprehensions of a statistical paper that it had ever been my fortune to see.

3275. In what way?—The French returns did not profess to give the relative proportions of population vaccinated and unvaccinated in the districts spoken of; but only the numbers vaccinated in the particular year under consideration; and even here, in great part, the vaccinated and re-vaccinated were lumped together. The case requires to be read just in the inverse direction to that in which it has been quoted to the Committee. Where there was small-pox the people went to be vaccinated. Having previously let great arrears grow up, then, in that particular year when small-pox was epidemic, the people ran to be vaccinated and re-vaccinated; just as here in London of late our stations have been literally mobbed by people pressing for vaccination and re-vaccination. To suppose that the higher statistics of vaccination account for the higher statistics of small-pox is to mistake effect for cause; a ridiculous misapprehension of the case.

3276. It may be so, but it did not appear to me to be so on reading the paper: with regard to the Navy; this I believe is your statement in the paper as to the practice of vaccination, at page 12: "We have no means of ascertaining the relative proportions of men bearing marks of vaccination and of previous small-pox in this force"

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[that is, in the Navy], "but as it is a standing order that all men and boys entering the service who have not satisfactory marks of either, shall be immediately vaccinated, we may look upon them as a completely protected class;" those, I think, are your words?—It is in an Appendix to my statement; it is the statement of the Naval authorities.

3277. It would appear, then, from the case of the ship "Octavia," that they are by no means a completely protected class?—It would be desirable to know from what time that rule came into operation.

3278. What is the date of that Report?—1857.

3279. You stated that in 1857, and the instance of the "Octavia" occurred in 1866, did it not?—Quite so.

3280. Then that statement, and those facts, with regard to the "Octavia," do not seem to agree?—They do not; that is to say, it appears that out of a population of 610 on board the ship, 21 had not followed the regulation. But I have reason to believe that the unvaccinated were people who had joined abroad; that the ship was in Indian waters; and that they were men who had there joined, not being English subjects.

3281. Is it true that there has been a great change in the treatment of small-pox by medical men within recent times?—About two centuries ago, under the influence of Sydenham there began a great reform in the treatment of small-pox, but I am not aware that within this century (nor indeed within the last 100 years) there has been any material change.

3282. Do you think there has been no change with regard to giving patients more ventilation, and more ablutions, and so on?—Yes, if you call that a change of treatment; but probably for more than a century and a-half it has been accepted that the stifling treatment of small-pox which long ago was practised should no longer be practised.

3283. But do you think that that stifling system has been generally abandoned for a whole century?—As far as the means of people have allowed them to abandon it, I believe it has.

3284. Are not medical men as a rule rather slow to accept these changes?—Slow, perhaps, if counting by months, but not if counting by those long periods of time.

3285. Does it not seem as if a change like that (I think it is a very important change) in itself would make a great difference in regard to the seriousness of small-pox?—It would undoubtedly make a difference.

3286. Then at least there is one influence in the world independently of vaccination, which has produced some change, if it be only a small change?—In comparing the small-pox of to-day with the small-pox of two centuries ago, that is so.

3287. Can you tell the Committee what the true vaccine matter is?—I am not sure whether I quite understand the question.

3288. I have frequently heard the term "true vaccine matter" among medical men, and I thought perhaps you could explain what that was?—If you mean what in current practice is true vaccine matter, it is the lymph of a characteristic vaccine vesicle.

3289. Taken from the arm?—Taken from the arm.

3290. You made an inquiry into the effects of vaccination, and you have given us a report of that; was the inquiry perfectly satisfactory to

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you?—In what respects? It was so very large an inquiry that I should be glad if your question could be sub-divided a little.

3291. I mean, of course, whether the whole results of the inquiry were such as to give you satisfaction; whether you thought the case fully made out?—The case of the protective value of vaccination I conceived to be perfectly made out.

3292. You inquired of a very great number of medical men; do the opinions of all the medical men of whom you inquired appear in that Report, or were any of the opinions extruded?—Certainly none of the opinions were extruded.

3293. Will you state how the 542 medical men of whom we have heard so much were selected?—The persons applied to were many more than 542, for some considerable number did not answer my circular; but the chief mode of selection was to take the Medical Directory of the year, and to write to the physicians and surgeons of hospitals; I am speaking from memory of what was done 15 years ago, so that I can only give the general principle upon which I proceeded; but the physicians and surgeons of, I believe, all the hospitals in England and Wales were written to.

3294. They were preferred to men in private practice?—Besides hospital practitioners, many were written to who were in private practice exclusively. There were eminent men who had by that time resigned their appointments at hospitals to whom in some cases I wrote, and others who had never held such appointments; but the main principle was that I wrote to the physicians and surgeons of all large hospitals. To the best of my recollection I wrote also in important cases to dispensaries, but I am unable now to say to what dispensaries, without going through the list again. With the exception of a few persons selected on special grounds of personal qualification, the basis of selection was entirely official; the basis of standing as physicians and surgeons of public institutions, of practical professorships in medical schools, and so forth.

3295. Then if you had known of any medical men who were opposed to vaccination, or who had doubts about it, would the inquiries have been sent to them?—If I had known that any physician or surgeon of credit had stated important facts against vaccination, I should most assuredly not have omitted him.

3296. Then, in your opinion, all the medical men who have expressed doubts about vaccination, are persons of no credit?—What I mean is, that if I had known any physician or surgeon of the standing of the class that I addressed, who objected to or doubted the good results of vaccination, I should have written to him.

3297. Did you read a letter to Sir Benjamin Hall from Mr. John Gibbs, which was printed by order of the House of Commons in the year 1856?—I daresay I did; I have read a great deal of Mr. Gibbs's.

3298. Did you advise Sir Benjamin Hall to object to the printing of that paper?—You are asking me a question which I cannot answer merely from memory concerning the paper; but it is in my recollection that my office never made me Sir Benjamin Hall's adviser, nor gave me any official connection with Sir Benjamin Hall.

3299. Did you advise him, in this instance, to object to the printing of that paper?—I really do not remember to have had any communication with him whatever upon the subject. I cannot conceive that I had.

3300. Then you did not advise him?—You must take my answer for what it is worth. I have no recollection of having had any communication whatever with Sir Benjamin Hall upon the subject of vaccination.

3301. It has been stated that Sir Benjamin Hall did object to the printing of that paper; do you know why he objected?—I do not. I barely remember that such a paper exists, and as to having had any communication with Sir Benjamin Hall about it, I have no such recollection.

3302. Have you seen the opinion of Baron Humboldt upon that paper?—Lately, I have seen a letter quoted as his, with reference to that paper, among several comical things which the anti-vaccination people have published.

3303. You do not think that the opinion of Baron Humboldt is entitled to any consideration upon that subject?—Baron Humboldt was at that time very old, and perhaps may have departed from what in earlier life he would have considered a very important principle, that even a generally highly accomplished man should not off-hand give opinions upon subjects which he has not specially studied; but I have not seen enough of his alleged letter to be able in any degree to speak either of its bearing or of its value.

3304. Were you aware that during the Session of 1856 your circular, being dated in October in that year, petitions had been presented to the House of Commons from at least 10 medical practitioners against compulsory vaccination?—I merely remember that about that time some petitions were presented to Parliament by some medical persuasion which has the inauspicious name of "Coffinites;" otherwise called, I believe, herbalists, or medical botanists; not I think what the Committee would quite recognise as medical practitioners in the usual sense of the word.

3305. Are these men whose names I have here of that class: Dr. Epps, Dr. H. Johnson, Dr. Pearce, Dr. S. Johnson, Dr. Skelton, Dr. W. A. Johnson, Dr. Laurie, Dr. F. Johnson, and Dr. Reed; are they of that class?—No; at least so far as I know their names, I believe they are not herbalists.

3306. Did you send queries to any of those gentlemen?—Without knowing whether at that time any of them were physicians or surgeons of hospitals in England and Wales, I cannot say. If they were in that position I should certainly have sent my circular to them; but I should not have done so on other grounds, because among the names which I have heard read I do not recognise those of any eminent men; I should not have felt called upon to send circulars to those persons on grounds other than those of their being in official positions.

3307. Were you not aware that it was the policy of the Petitions Committee at that time not to allow the publication of matter which might act injuriously upon the public mind with regard to this question?—I cannot speak to that.

3308. Did you advise that any such petition should not be made public or printed for Members?—I have no recollection of any reference to me on the subject. As I have again and again stated, I was in no official relations with Sir Benjamin Hall, and do not recollect ever to have had any communication with him on the subject of vaccination.

3309. Was not Sir Benjamin Hall president of the

the Board of Health at that time?—Never while I was in office.

3310. I think you stated in speaking of your opponents that they were rather interested in the work in which they were engaged?—Yes, and I believe I explained the sense in which I used the word.

3311. Do you know what is the sum of money voted to the Medical Department of the Privy Council at the present time?—I have not the estimates here.

3312. Is it about 27,000 l.?—Yes.

3313. Has not that very rapidly increased of late?—Yes.

3314. It is not surprising if people talk about interest upon one side that the opponents of all this system have (sometimes it may be most unjustly) a suspicion of an interest on the other, especially when we find a large department here, and the enormous sums which doctors get from vaccination amongst all their patients. It is not surprising that those opponents should think that there is, perhaps, some interest on the other side which may bias minds even like your own?—Not at all, but no doubt it will occur to the Committee that to have let small-pox rage as of old might have been a better bargain for the profession.

3315. I notice in the course of your examination that you have spoken in terms of extreme contempt of your opponents; is it because you think them ignorant and unscientific?—If your reference is to the anti-vaccination agitators, I think some of them ignorant, and I think others of them dishonest.

3316. Do you fancy that the common sense of people is to go for nothing in legislation of this kind?—No.

3317. Has not the common sense of the people often saved the community from grave errors of doctors?—I do not remember an instance.

3318. You have never heard of people who have had the wisdom to reject both, advice and drugs, perhaps. The extreme contempt which you show for your opponents of course must be based upon the belief on your part that the advantage of vaccination is so self-evident that only an idiot probably could resist it?—So far as the question is one of intelligence, that is about my opinion.

3319. That being so, does it not seem to you a somewhat extraordinary thing that we should require compulsory laws and cumulative fines and imprisonment, in order to make men of common sense and ordinary observing powers accept vaccination?—The common sense of the public is I think fairly illustrated by the fact that among the educated classes pretty nearly every one is vaccinated. Among the less educated classes there is a great deal of procrastination, and the main object of the compulsory law is to conquer that difficulty; to conquer indolence and apathy.

3320. Then you are in favour of taking additional measures to conquer more completely that apathy and indolence?—The law as it stands seems to be sufficient for that purpose.

3321. You would not make the provisions more stringent?—No.

3322. Are you disposed to think that it is a good thing in the case of a doctrine which you say is so plain that every man who is not an idiot can understand it to heap fines upon men for not accepting it, and to send them to prison?—Allow me to answer by a somewhat parallel case. I suppose that a doctrine, so evident that anybody but an idiot would accept it, is the doctrine that every

man, according to his power, should subscribe to the public purse for the defence and other general services of his country; but, notwithstanding the evidentness of the doctrine to all educated persons, it is requisite to have law to enforce the payment of taxes; and, as part of such laws, it may be requisite to have the power of putting the disobedient into prison, or you would have difficulty in getting that principle, which every one accepts, acted upon by every one.

3323. Then you approve of putting men into prison if they will not be vaccinated contrary to their own belief of the advantage of vaccination?—I should not myself put it quite in that way. I should regret very much that a person were imprisoned on account of his refusal to have his child vaccinated; it would be to me personally, if I were a magistrate, a very painful necessity to have to send a man to prison under such circumstances; but he is not sent to prison for not having his child vaccinated; he is sent to prison for not obeying the law of his country; and if the judgment of Parliament, the final judgment of the Legislature, is not to be binding upon every people in this matter, so immensely important as it is for the public health, no law can be binding.

3324. The question I ask is, whether you are in favour of a law which sends men to prison for refusing, as they believe, in duty to their children, to have them vaccinated?—I am in favour of the law substantially as it stands.

3325. Mr. Taylor.] You have paid some very special attention to vaccination as a preventive of small-pox, have you not?—I have.

3326. Have the opinions which you have formed been purely those of a statistician, or has your own practice as a medical man brought you into connection with the subject?—It is mainly as a medical statistician, by considering masses of national evidence, and as a reader of medical history, that I have formed my opinions on the subject.

3327. Not the experience of a practical medical man?—No, rather reliance on what I may call the great masses of national evidence.

3328. It has been stated before this Committee by the opponents of vaccination that there is no analogy to the theory of protecting from one disease by the introduction of another, I presume that the theory of vaccination as a prophylactic against small-pox is similar to that which says that a person is not likely to have the small-pox twice?—I think it is. I prefer resting my recommendation of vaccination on practical rather than on theoretical grounds, but that is the theory of the protection.

3329. Vaccination is not considered to be entire protection any more than an attack of small-pox, is it?—Just so.

3330. Is it your opinion that as protection it is stronger in regard to the number of attacks, or in regard to the mortality of those who are attacked?—We have not the means of perfect knowledge as to the protection against attack, for the protection against severe attack is so great that perhaps there are slight cases which pass unobserved. For instance, among the cases which I quoted on board the "Octavia," there were a considerable number who had no eruption, who had merely a feverish attack. It is impossible, I think, to say, or at least I would not venture to say, what is the protection against any amount, however small, of attack. The protection against fatality, or against severity

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severity of attack, admits of being more accurately measured, and that, where the vaccination has been thoroughly good, is almost absolute.

3331. Are you of opinion that the observation, which is not an uncommon one, that when a person has had small-pox he has better health afterwards, is correct?—When small-pox was a popular disease in this country the contrary was very much noticed. There is abundant record how frequently and how severely those who had small-pox were deteriorated in health by the disease.

3332. You do not, on the whole, believe that theory?—No.

3333. Do you believe that the health of those who have gone through vaccination is likely to be improved or damaged by it?—Neither; speaking generally, I believe vaccination to be perfectly indifferent to life, except as serving to cut off the one great danger of small-pox.

3334. Dr. Epps, who, I believe, was Medical Director of the Royal Vaccine Institution, held a different opinion; he said, "If the vaccine virus does not produce the vaccine disease it produces something else, *i. e.*, a noxious agent is introduced to poison the system against the poison of small-pox, but if it does not produce this result it still poisons, and thus it will be seen without the benefit superadded of protecting from small-pox;" would you agree in that opinion?—Not in the least; I believe it to be all moonshine.

3335. We have been told that if a child be not strong of constitution, and have the seeds of disease in it, vaccination is very likely to bring out the latent disorder; are you of that opinion?—It is of course the business of the doctor who is going to vaccinate to see to the health and susceptibility of the child whom he is going to vaccinate, and so to avoid that danger. No doubt in certain cases he would come on subjects who might have their health temporarily deranged by vaccination.

3336. You have admitted indisposition to vaccination may go to such an extent that a child may be put out of health by it?—Yes.

3337. Are you not of opinion that, in so very extensive an operation as the compulsory vaccination of every child, it is quite impossible that due discrimination can be exercised to see that every child is in a fit state of health to be vaccinated?—I think that it is not, to any material extent, impossible.

3338. You are in favour of something like the present law of compulsion, because as you say there is a great deal of apathy and procrastination?—Yes.

3339. But it is a more important question, is it not, that compulsion should be exercised not upon those who are apathetic, but upon those who are opposed to vaccination altogether?—I feel the great difficulty of dealing with crotchety people. I suppose that it is a difficulty that lies in all law making, that you may find people who when they are really only very conceited and crotchety, fancy themselves conscientious. I feel the great difficulty of dealing with cases of that kind, and I wish that there were a good loop-hole for them. I think that the law would be very well quit of them. If it were a case only concerning the parent himself, by all means let the parent go, I would say; but it does not concern only the parent himself, and the State has to judge according to all the evidence which is before it, whether vaccination is really such

a safeguard to the child's life that the parent ought not to be legally allowed to leave the duty unfulfilled of giving the child that safeguard.

3340. But as you hold so strong an opinion with regard to the almost self-evident advantage of vaccination, do you not think that there is a danger of producing a reaction and greater dislike to it in the public mind, by compelling rather than persuading to it?—I feel and always have felt that difficulty. In my report 14 years ago, I frankly said, and I have no objection now to repeat, that on exactly that ground I should have felt great hesitation as to recommending the enactment of the compulsory law; but the result showed that my fear would have been unjustified.

3341. In giving the history of the alleged effect of vaccination upon small-pox, you gave us epochs, the first in the last century in which there was no vaccination; the second, in which vaccination was confined to charitable or private vaccination, the third when there was optional statutory vaccination, and the fourth when there was compulsory vaccination; and you gave us the ratio of deaths in those four periods by small-pox at per million of the population as respectively 3,000, 770, and 304, and 184?—That is so.

3342. You stated, did you not, that in your opinion the whole population of London practically, with the exception of perhaps some 2½ per cent., may be said to be vaccinated now?—I think that, excluding infants, all but about that proportion are either vaccinated or have had small-pox.

3343. And you are of opinion that there has been a very great improvement in vaccination of late years?—Yes.

3344. Does it strike you, then, as satisfactory that the fact should be, as I believe it is, that for many weeks past an average of 200 persons per week have been dying in London of small-pox, which, if extended to the year, amounts to 10,400, or to something very considerably above the 3,000 per million of the population which you spoke of as to the worst period, namely, the entirely unvaccinated period?—I am not able to judge of the statistics of this epidemic; it is quite impossible to judge them until we have them as a whole before us. I would note, however, that the death-rate which I quoted as that of the unvaccinated period was not the exceptional death-rate of a particular half-year with small-pox raging at its maximum possibility, but was the estimated average of 20 years. Moreover, when I speak of the proportion of the vaccinated population, I speak from materials collected a few years ago, and I cannot say what may have been the influence of the kind of agitation which has been going on against the enforcement of the law among the poorer classes of London. I should suppose that that influence must have increased very seriously in some places the difficulty of enforcing the law; and that the number of the unvaccinated in particular places may sometimes have been very large.

3345. In London?—Even in London, in some parts, but I am not able to speak accurately.

3346. The question appears to have three branches; in the first place the per-centage of unvaccinated; in the second place, the satisfactory character of the vaccination which is performed; and in the third place, the actual mortality. It is clear, I fear, that the mortality from small-pox is a fact that cannot be doubted; upwards of 200 per week dying of the disease?—

Quite

Quite so; but when you compare that with the previous rates you must remember that those rates are for long terms of years, and also for the entire country of England and Wales; and the mortality of this year, when several other years are taken with it, may or may not give, for England and Wales, a death-rate exceeding the 184 which you quoted as the end of your series.

3347. In regard to the $2\frac{1}{2}$ per cent. of unvaccinated, you answered at Question 3055 to the effect that it was dealing with very large numbers, and that the extraordinary epidemic now was probably not excessive in mortality, taking into consideration the 80,000 that remained unprotected; have you worked out that calculation?—No, I have not.

3348. It seems to come to the fact that the mortality by small-pox in London at present is at the rate annually of 10,400 out of an assumed unprotected population of 80,000; in fact, that the deaths are one in eight per year of the unprotected; that is so, is it not?—Yes; among unprotected populations, there probably have been worse facts than that. Strictly speaking, however, the population supplying our present high mortality is of three sorts: 1, the unprotected infantine population below the ages to which my comparison applied; 2, the unprotected per-centage, which I roughly took at $2\frac{3}{4}$ per cent., and which you reckon as 80,000 persons of the remaining population, and, 3, the great mass, some 3,000,000 of people, protected in various degrees by vaccination or previous small-pox, but from among whom, in so extreme an epidemic as the present one, large numbers of cases of post-vaccinal small-pox, and of second attacks of small-pox must come.

3349. You stated at Question 3075 that in your opinion a surgeon would be wholly without justification who took lymph from a syphilitic child; that is to say, that you decline to give an opinion at any rate that syphilis is not communicable by vaccination?—I have not the least doubt that syphilis has been communicated in what has purported to be vaccination.

3350. Through a syphilitic vesicle, I presume you mean?—That in what has purported to be vaccination syphilis has been given there can be no manner of doubt; that was the case in the very often-quoted instance of Rivalta, but what may have been the details of that performance I cannot positively say; perhaps in the second series of the cases the details were not the same as in the first; in the sentence which was quoted from my evidence, I meant that nothing would justify lymph being taken from a child known to be syphilitic.

3351. But at Question 3088, you profess yourself doubtful whether hereditary syphilis, even if not manifested in a child, may not be directly communicable by vaccination?—Yes.

3352. Dr. Ricord is, I believe, a physician of some eminence?—Of high eminence.

3353. You are aware that he stated in 1862 that if there should be the fact indisputably established that by vaccination even only in one case syphilis was transferred, vaccination must cease, because the condition of medical science does not enable practitioners to tell whether there be syphilis in the system or not, and that subsequently he became reluctantly convinced that syphilis had been communicated by vaccination?—Yes.

3354. You do not share in the opinion he held, that vaccination must cease if it could be shown

that syphilis had been communicated through the vaccination?—Certainly not; if it were shown that syphilis is unavoidably associated with vaccination, it might be a very serious question whether the gain of extinguishing small-pox be too dearly purchased; but as quite notoriously that is not the case, the question assumes a very different form.

3355. Do you not think that in the very extensive process of the vaccination of a whole nation it would be exceedingly difficult to exercise the supervision that there should be, in order to prevent the possibility of the communication of such disease?—If I were answering that as it is put, almost as a theoretical question, speaking *à priori*, I should say that it would be very difficult; but if instead of so answering it I answer it from actual experience, we have as a result, that while the vaccinations of Europe are annually done in millions, allegations that will bear examination (I do not mean cock-and-bull stories, such as I have refuted here on the subject, but such real facts of syphilitic vaccination as will bear examination), are of the very utmost rarity, are among the very rarest experiences of medical practice. I have not the least doubt of the fact that syphilis, in some very few and far apart cases, has been given in what has purported to be vaccination, with what amount of blame attaching to the performer in each particular case I cannot always say; that is a very difficult question; but, taking the broad result, it seems to me certain, either that from natural causes the possibility hardly ever arises that vaccination will convey syphilis, or else that the common practice of vaccination is so conducted as to make the risk quite infinitesimal.

3356. Are you aware that Professor De Paul, Director of Vaccine in Paris, reported to the Academy 450 cases of vaccine syphilis?—I know that Dr. De Paul reported to the Academy cases of invaccinated syphilis; and if he also referred to all published cases known to him in the medical literature of Europe since the use of vaccination, he may have spoken of the entire number of sufferers as 450. I do not know the number. But in quoting Paris on any subject connected with syphilis, it may be proper for me to observe that the subject of syphilis altogether has been a polemical one in Paris, with a great deal of heat and furious fighting for victory on both sides, and it would be desirable, I think, to get one's facts, if possible, from a calmer and less controversial atmosphere.

3357. You spoke of the moral right of the State to enforce its views in regard to vaccination upon the whole population as being as absolute and undoubted as in regard to the question of the expenses of the country and the payment of taxes, and so on?—As of the same kind.

3358. Are you not of opinion that it must be admitted that if a child in a bad condition of health may be seriously affected by the disease of vaccination, and likewise if it is possible to communicate syphilis by vaccination, the moral right of the State is, to say the least of it, very much diminished in that regard?—It is a question of quantities and proportions. If those dangers to which you refer are in their total amount utterly insignificant in quantity, as compared with the good of vaccination, the State may feel itself called upon to disregard them.

3359. Dr. Brewer.] Do you state the probable population of London to be above three millions?—

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millions?—I think the Registrar General estimates it at about 3,200,000.

3360. Do you know the approximate number of deaths from small-pox during the last 24 weeks?—I have not the figures.

3361. Can you imagine that it is from 4,800 to nearly 5,000 in the last 24 weeks?—I have not the numbers, but it may be so.

3362. Do you deem the actual epidemic unusually severe?—Undoubtedly.

3363. Do you think the relation of deaths to the number of the population great, when you compare those deaths with the deaths observed in countries where vaccination is not practised, when a great wave of small-pox has passed over them?—I suppose that we may fairly take this epidemic to represent about the maximum of what small-pox can do to London, and it is a very small fraction of what the disease has done in other countries. I pointed out that it is but a small fraction of what it is now doing even in Holland, where the population is no doubt in great part vaccinated, although vaccinated with undue delay.

3364. Taking a historical view of the number of deaths in proportion to population which has followed a severe epidemic of small-pox, would two-thirds of the whole unprotected population be an unexampled number of persons attacked?—To the best of my belief, certainly not.

3365. Would one-fourth of the number attacked perishing in the attack in those circumstances be an unexampled number?—Certainly not.

3366. Would you then repeat whether you conceive that the metropolis, suffering under a severe epidemic, has shown that the protection of vaccination has greatly depreciated?—I do not see a shadow of pretext for the assertion that the protective value of vaccination has decreased.

3367. Do you know any habits of general sanitary propriety in a family which could exempt any from the attack of small-pox, except the family were individually protected by vaccination?—No, unless they lived in absolute seclusion from infected population.

3368. Have you any reserve or doubt whether or not vaccination is the one and only protection against small-pox, except isolation?—I believe it to be the only protection.

3369. Is there known in science that which is called a characteristic vaccine vesicle?—Assuredly.

3370. Can the vaccine virus be ascertained to be pure by the observation of a skilled practitioner?—The character of the vaccine vesicle is easily tested by eye-sight; and so in some most important respects is the purity of the vaccine lymph; but in some respects the question of the purity of the lymph may, I think, be a question of the healthiness of the subject, not self-evident in the lymph itself.

3371. If there be a second vaccination, is the vesicle altered in its character, and is the material altered in its appearance?—The local effects of re-vaccination are modified effects; sometimes not going to the formation of vesicle at all.

3372. With reference to your Answers 3138 and 3080, do those answers apply to the risk run by any individual in ordinary vaccination?—I observe here, "That is the case about which I wish to be understood, as expressing a doubt."

3373. Do you think a child suffering from constitutional syphilis, being the medium for vaccination, can convey the disease of syphilis?—I have no evidence that vaccination from a child hereditarily syphilitic, but not having any outwardly discover-

able sign of the disease, can convey syphilis; but I would strongly advise the practitioners of vaccination to proceed always with as much caution as if it certainly could. I speak with doubt about it; I cannot affirm that such infection could not take place: yet, if it could take place, I cannot conceive why we are in a state of so much uncertainty about it. I can scarcely conceive the possibility that the sort of men who would have had ample opportunities of observing the fact if it were real,—men who have had all kinds of rare cases of disease brought before them, would not have seen this result frequently, and very frequently, instead of having never seen it, if such infection really occurred. It seems more probable that the alleged cases have been cases in which the signs of the congenital syphilis have not been gross, and have in consequence been overlooked. I go as far as that, and say that in certain cases where there have not been gross signs of syphilis, vaccination, or what has purported to be vaccination (I draw the distinction) has conveyed syphilis. I should be disposed to submit to the Committee to take that view; I think that view ought to be taken. Of cases of the exact sort to which I understand your question to refer, I am very doubtful; and if any such have ever occurred, unquestionably they have been of such extreme rarity that it requires a microscopical eye to be sure of them. Indeed, taking all occasions together where syphilis seems to have been communicated by vaccination from children with hereditary taint, the total number still represents one of the very rarest of medical experiences. So far as one may utter anything like a law in regard to those vanishing quantities, the communication seems probably to have depended upon the admixture of other matters (*i.e.*, of blood or of blood-derived corpuscles) with the vaccine lymph, rather than that the vaccine lymph itself did the mischief. It is a matter well known to the medical profession that syphilitic blood can convey diseases; this is notorious; but it is a uniform practice, I believe, with careful vaccinators never to let blood admix itself with vaccine lymph.

3374. But lymph from a characteristic vaccine vesicle is more than semi-transparent; is it not?—It is quite clear.

3375. It is very nearly limpid?—Yes.

3376. Practically, would it be perfectly easy to ascertain whether you have characteristic vaccine lymph in the vesicle which is presented to you?—As regards the common physical characters, undoubtedly.

3377. Does any of your remarks apply to this material which to the naked eye and to the senses undoubtedly conveys the idea of a characteristic vesicle?—It is obligatory in my view of the case upon the vaccinator to examine the child from whom he vaccinates, to see that it is thoroughly free from all marks of syphilis, and I think he should have a reasonable conviction that the child is not likely to be incubating syphilis; but given a child hereditarily, though as yet only latently syphilitic, and supposing him to take from that child's typical vesicle lymph entirely unmixed with other matters, entirely without blood, entirely without pus or other inflammatory product, I do not myself feel sure that would be likely to communicate syphilis.

3378. You give it that you do not believe it?—I do not feel sure of it. It seems more probable that in that particular case the contents of the vesicle *per se* would not be able to give syphilis

syphilis. Clearly, however, one would not wish to make the experiment.

3379. You cannot give it a stronger expression than that?—We have not the facts.

3380. Are you aware of Sir William Jenner's opinion expressed before the Select Committee of the House of Lords; that a great number of diseases have of late years been found to result from syphilis in children that were not previously suspected to have been syphilis?—Such is certainly the case in relation to adults. As regards children, no doubt Sir William Jenner has good reason for what he says, but it would not have been my impression so much in regard to them.

3381. How can the risk of communicating syphilis by vaccine matter be practically obviated with certainty?—With vaccination, as ordinarily practised in this country, the risk is so nearly non-existent that evil results are almost unknown; and more perfect security can be attained by still higher degrees of vigilance in various ways that I have been describing.

3382. With a moral certainty?—In speaking of these infinitesimal quantities one has not the material for speaking with the positiveness with which I have spoken about some other matters; but I believe so.

3383. There has been a great outbreak of small-pox recently in Paris; have you had warnings from high medical Parisian authorities for two years past that small-pox would break out, and find the population greatly unprotected by reason of the vicious mode of vaccination then practised?—I am not aware of any distinct prophecies on that subject; but those who know anything of vaccination in Paris will not have been at all astonished at the fact of a tremendous epidemic of small-pox having raged there.

3384. Mr. Alderman *Carter*.] I think I understood you to say that, supposing you were a magistrate, you would consider it a great hardship to commit a person to prison for refusing to have his child vaccinated?—If you mean to ask me whether I should think it painful to the person to be sent to prison, of course I answer the question in the affirmative.

3384.* I was referring, not to the person, but to the feelings of the magistrate in reference to the matter; I understood you to say that if you were a magistrate you would feel it a hardship or a difficulty to commit a person to prison for refusing to have his child vaccinated?—I should feel it painful as a judge feels it painful to put on his black cap. There are many judicial functions, the exercise of which in detail is painful.

3385. Supposing that a person was relieved after one conviction or one fine, do you think that great injury would result to the population?—I do not; but the practical awkwardness would, I think, be that if the fine were purely nominal, if it were a question of paying 6 *d.* or 1 *s.*, the desired effect would not be obtained.

3386. Supposing the fine were 1 *l.*, would that obviate the objection?—That fine of 1 *l.*, if it were uniformly enforced, unless it were preceded by some very definite personal stir-up of the defaulter, would be a very heavy fine to impose on a poor man, and might really often mean his going to prison; no discretion would be left to the judge of saying, "Now I will fine you only 6 *d.*, if you will undertake to go and have your child vaccinated," for he would have no means of enforcing the engagement afterwards if he had

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only the one penalty at his disposal. I think the proposal of the Honourable Member for Sunderland, last year, to have a limit of two penalties, which would admit of the first penalty being a purely nominal one, but would allow the second to be penal, would fully answer the purpose as regards the masses of the population.

3387. Is it not the fact that vaccination is performed to the great mass of the poorer classes by very incompetent medical men?—No; I think that cannot be fairly alleged.

3388. Is it delegated in any cases that you know to assistants?—I presume by assistants, you mean unqualified assistants; I am sorry to say it has been extensively delegated to assistants, but we have resisted that practice, and I hope with considerable success. We have invariably made it a matter of complaint, and wherever we have discovered its existence we have made it a ground for refusing to give grants of money from the Parliamentary Vote. I must say that I think, if it were persevered in after notice, it ought to be a reason for dismissing the public vaccinator from his office.

3389. Have you any opportunity of knowing whether or not it is the case that vaccination is performed by incompetent persons, excepting from the visits of your inspector, which I understand to be made once in every two years; have you any other means of knowing whether young men, assistants or apprentices, perform vaccination instead of properly competent medical gentlemen?—The Privy Council has a regulation in force, that no person may act as a deputy for a public vaccinator who is not possessed of the same qualifications as the contractor himself.

3390. As the rest of the population would be protected, you think that not much harm could come from a few crotchety people being allowed to pay the fine rather than have their children vaccinated?—On the general population, very little effect would be in that way produced. The number of persons who really object to vaccination and would resist it, I believe is not large; though there are plenty of people who require the compulsory law to make them have the vaccination performed in due time; but the number of persons who really object to vaccination, apart from those who at a particular moment are alarmed by those absurd falsehoods that have been propagated by agitators about the country, is, I believe, very small.

3391. I think in one part of your evidence, I understood you to say that depression in trade increased the general mortality, is that so?—Poverty is undoubtedly a cause of increased mortality.

3392. Do the facts in connection with the mortality in the whole of the Lancashire towns during the cotton famine bear out that idea of yours?—I am not at this minute prepared to speak on the statistics of that period.

3393. My impression is that the statistics of those years were much more favourable than the general statistics of mortality, and that when the people were the worst off in Lancashire, they were least subject to death?—In such a comparison there is room for a vast deal of fallacy; vital statistics, as I have said, are very complex affairs; in ordinary times, the fact of mothers being away from home employed in the factories is an immense cause of infantine mortality; when the mills were exceptionally closed, the mothers were at home; and so it may have happened, either altogether or in particular local relations,

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that even the famine was less murderous than the enforced idleness of the mothers was preservative of life.

3394. Mr. *Candlish*.] And there was less drinking I suppose?—Yes.

3395. Dr. *Lyon Playfair*.] And fewer opiates used?—Yes.

3396. Mr. Alderman *Carter*.] You were asked this question, "I see that a statement has been made, in the course of the evidence before the Committee, that the Prussian Government have recommended re-vaccination at the age of two years, do you know whether that is the case or not?" And your answer is "I have no knowledge on the subject; I should expect to be laughed at, if I asked the question over there." On page 182 of your Report, in reference to Prussia you say "re-vaccination is therefore generally recommended, and in cases of an epidemic of small-pox is even ordered as early as within two years of the period of a previous successful vaccination;" how do you reconcile that observation with the answer that I have read?—I understood the question to be, whether the Prussian Government had made a general recommendation or a general regulation that re-vaccination should be performed at two years of age.

3397. But it appears from this account that they recommend in the case of epidemic that re-vaccination should take place in many cases within two years of successful vaccination being performed?—I confess myself not able to explain this passage at page 183 of the Prussian statement. I do not understand the passage, but I am persuaded that there can be no general Prussian recommendation that re-vaccination should be done at two years of age.

3398. Do you agree with the opinion that has been given to the Committee, that the general mortality is less when a small-pox epidemic prevails?—Certainly not.

3399. Mr. *Candlish*.] Have you in your own practice vaccinated much in earlier life?—No; I have had no large vaccination experience.

3400. You have ceased to vaccinate altogether for a great many years, I presume?—Yes; I never was in general practice: and in surgery, to which I confined my private practice, my personal experience of vaccination was very small.

3401. And you have not observed much vaccination?—Yes; I have observed it.

3402. Under your own eye, I mean?—I have observed vaccination, of course.

3403. Do you consider that you have observed it to a great extent or only to a limited extent?—Considerably.

3404. You referred some time since to the evidence given by Mr. Gibbs as the state of things in France; are you aware that he was referring to years that were not epidemic years at all, and that the statistics which he gave were not the statistics of epidemic seasons?—I am at a loss to conceive how Mr. Gibbs could have found that small-pox increased as vaccination increased, unless small-pox was present.

3405. If I remember correctly, that was not the nature of his evidence, but it was to show that where there was more vaccination there were more deaths from small-pox, and where there was lesser vaccination there were fewer deaths from small-pox, a general fact not applying to epidemic years at all, but to years when there was a given amount, although a limited amount of small-pox?—There is no other measure of an epidemic year than the quantity of small-pox. You do not

judge an epidemic year by any other sign than I know of.

3406. But small-pox has been a constant quantity in France for many years, has it not?—I cannot say that it is. I do not know the small-pox statistics of France enough to speak to that point.

3407. If he does not speak of an epidemic period, but of the ordinary and normal amount of small-pox in France, there would not be the running to obtain protection against an epidemic to which you referred, would there?—And in that case there would be a concurrence (to take the extreme case) of no vaccination and no small-pox. That would be an extreme illustration.

3408. But the facts show that there were both vaccination and small-pox although the latter was not present as an epidemic?—If they are in proportion to one another, the relation, as I contend, is this: that in proportion as small-pox cases become numerous the people run to get vaccinated. "Epidemic" only means that there are a great many cases; when there are a great many cases a great many people run to be vaccinated.

3409. But unless there were some special excess of small-pox during these years, there would be no special motive to run to be vaccinated, would there?—If there was an excess there would be a motive, and if there was a great excess there would be a great motive.

3410. That is an affirmative answer to my question, is it not; if there were no excess there would be no increased motive for running to be vaccinated?—Quite so, taking zero as the standard line.

3411. In answering Question 3045, you say that on an examination of London school children to the number of nearly 53,000, of ages between three and 12, only 5 per cent. were found unprotected, from which you infer that one-fifth of the patients in the Small-pox Hospital at Highgate unvaccinated are supplied by the 5 per cent. of the unvaccinated general population; in other words, that 5 per cent. of the general population unvaccinated supply the deaths in this hospital?—Much less than 5 per cent. unprotected of the general population above childhood supplies the Small-pox Hospital with its "unprotected" class above childhood. To make an accurate comparison, we want to draw distinctions according to ages, and we cannot do that without much more information than we have.

3412. If your answer would justly convey what I think you intend to convey, it would follow, would it not, that the unvaccinated patients in the hospital were from three to 12 years old, those being the ages at which they were found to be vaccinated up to the extent of 95½ per cent.?—Yes.

3413. In point of fact, that was not so, was it?—The proportion found protected in the schools was 95½ per cent., including 1 per cent. where the protection was by previous small-pox; and the 53,000 children examined were mostly under 12 years of age. Above that age the proportion unprotected is always diminishing; I quoted the recruit age as illustrating how at that age the unprotected proportion of the population is very much smaller.

3414. Then the instance you gave would not be relevant as an illustration of the vast amount of small-pox amongst the unvaccinated; and, in point of fact, you were speaking of two different classes of people, because the class of people in the schools is a different class from the class

class in the hospitals?—Not quite. I can only give you an approximation to the means of judgment here. You apparently wish to know how much of London is unprotected; what number of people supplies the minority of the small-pox hospital patients.

3415. That is interesting; but that was not my question?—But that was the point that I was putting before the Committee. I say that I cannot give you the means of judging that perfectly, but I can give you the means of approaching to it. I can show you that at schools, even at that early age, 95 per cent. and more will be protected one way or the other; that when you get to the recruit age a much larger proportion will be protected one way or the other; and probably when you get to people about 30, the proportion unprotected is very small indeed; almost inappreciable.

3416. Are you speaking of the present time?—I am speaking according to our latest knowledge; I cannot speak of this actual moment.

3417. I presume that the cases in the Small-pox Hospital to which you referred in those answers were mainly adults?—I have asked for that information, but unfortunately have not yet been able to get it. Mr. Marson is very much overworked, and has not been able to give it me; but I believe that young children are proportionately very little admitted into the Small-pox Hospital.

3418. Then the patients in the hospital suffering from small-pox referred to in your answer to Question 3045 will be in the main adults, as you believe?—The protected population in the Small-pox Hospital will be mainly not children.

3419. They would therefore be born before the Compulsory Vaccination Act, 1853, would they not?—Yes.

3420. And you state that a very much larger number of the population were unvaccinated then than since?—Yes.

3421. Will not all these facts put together lead to the inference that a very much larger proportion of the population from which those were taken than 5 per cent. were unvaccinated?—Yes; but then they have had small-pox, and are protected by having had small-pox.

3422. We had an argument upon the proportions, if you remember; if the numbers from whom they were drawn were very much larger than that 5 per cent., it would reduce the disparity between the proportions of unvaccinated who had small-pox and the proportions of vaccinated who had small-pox, would it not?—It is very difficult to work this out unless we have the ages defined separately, and I have not the means of giving you that.

3423. If, for instance, instead of 5 per cent. only being unvaccinated, 25 per cent. were unvaccinated, the proportions of them vaccinated who fall under small-pox would be very much reduced, would they not?—They would be very much increased, surely.

3424. The proportion would be one to 25, instead of one to five, would it not?—Yes.

3425. Supposing that the total number of unprotected cases in the hospital was 100, if the 100 cases were supplied by 5,000 people, the percentage and proportion would be very much larger than if they were supplied by 25,000 people, would it not?—Undoubtedly. I ought to mention that the proportion of “unprotected” patients in the Small-pox Hospital, which I assume to be at present about 20 per cent., has, ever since the

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use of vaccination, been a diminishing proportion. In the years 1836–51, before the Compulsory Vaccination Act, the proportion, according to Mr. Marson, was 45 per cent.

3426. Can you briefly state the difference in the provisions of the Acts of 1853 and 1867?—The substantial difference is that the Act of 1867 imposes upon local authorities the obligation of enforcing the law.

3427. How was that previously enforced by the Act of 1853?—By the local authorities, if they saw fit to enforce it.

3428. It was optional under the Act of 1853, and it is compulsory now; is that so?—Yes.

3429. If they do not enforce it, what follows now?—They disobey the law.

3430. What follows their disobedience?—They are liable to a mandamus.

3431. Boards of guardians are the local authorities, are they not?—Yes.

3432. You adduced a good many statistics respecting Holland at the present time; do those statistics show anything more than the fact that small-pox is very prevalent and fatal in Holland at this time?—Nothing more than that. It prevails chiefly among the young unvaccinated children.

3433. But I understood you to say that you had no knowledge on that point?—I immediately afterwards acquired the knowledge. I was furnished with information from the office, that Dr. Ballot, whom I quoted, says that the deaths are among young unvaccinated children.

3434. At the time when you gave that evidence you were not aware of that, were you?—At that moment I was not aware of it definitely enough to quote it.

3435. You have not the fact before you in a manner so precise, I apprehend, as would lead you to recommend the Committee to draw any inference from it?—I cannot say that.

3436. You know nothing about the proportions of vaccinated and unvaccinated in Holland, and you do not know what the law there is, do you?—I do not know what the law there is; but as far as one uses the word “know” in relation to things not under one’s immediate observation, as one knows on credible testimony things which pass in other countries, I know that a frequent practice with regard to vaccination in Holland is to defer it until children are going to school.

3437. So far as you put the matter before the Committee when you first mentioned it, I suppose you would not complain very much of those differing from you, if they pronounced it as a piece of evidence too ridiculous to put before this Committee?—I should not complain of anything that those people might say.

3438. Do you think that it all tends to elucidate this inquiry for you, as a professional witness, to accuse those who differ from you of dishonesty?—I have not the practice, I hope, of accusing those who differ from me of dishonesty, unless dishonesty appears on the face of their statement.

3439. That is merely your opinion, is it not, for “dishonesty” was the word which you used; you said that some were ignorant and some dishonest; do you think that the imputation of a corrupt motive is relevant, and will tend to elucidate this inquiry?—I daresay that Members of the Committee have had before them various sheets of paper making statements against vaccination which unquestionably are dishonest statements, and which probably every Member of the Committee would know for himself to be dishonest

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dishonest statements. I hold a bundle of them in my hand, and if it were worth going into such rubbish, they could easily be shown to be false.

3440. It occurs to me that such epithets as "rubbish," and "ridiculous," and "dishonest," are rather out of place in what ought to be a scientific and judicial inquiry?—I should be very sorry to use to persons *bonâ fide* differing from me any disrespectful expression; but it is an obligation on me that I should not mislead the Committee before whom I have the honour to be giving evidence, as to whether I attach importance to these statements, whether I can fairly regard them as scientific statements to be considered as made *bonâ fide*, or must look upon them as rubbish. I ought not to mislead the Committee about that, I should be behaving badly before the Committee in discharging my duty if I pretended to use polite language in regard to statements which really are utterly contemptible.

3441. You do not believe in any such thing as an honest opinion against vaccination?—I have not said anything like that.

3442. My honourable friend the Member for Manchester pressed you rather strongly upon that point, and I do not remember that you made any such concession?—I have certainly not expressed any such belief as your question imputed.

3443. You do not hold to that opinion; may there, in your view, be an intelligent, honest opinion against the protectiveness of vaccination?—No, not if in "intelligent" you include "informed," and if by "opinion" you mean judgment as distinguished from feeling. My meaning, not put offensively, is, that the protectiveness of vaccination is proved by such incontestable facts that no intelligent person, informed of the facts, and weighing them without prejudice, could doubt it.

3444. Then any Members of the Committee or of the House of Commons, holding that opinion, are either ignorant or dishonest?—Even they might be uninformed on the particular subject. The other supposition may of course be set aside.

3445. I do not know that I have understood you to tell the Committee that any impurity in lymph can always be detected?—The impurities of which we are most sure consist in more or less evident admixtures with blood or pus, and I am not able to speak confidently about others.

3446. But do you tell the Committee that impurity may be mixed up with lymph without being detectable, or that if there be any impurity in lymph it must be detectable by the vaccinator?—The admixtures to which I refer are detectable, but, as to anything else, you would be asking me rather a theoretical question.

3447. Can blood or pus in any portion, however minute, be at all intermixed with pure lymph without its being detected?—Admixtures of imperceptible minuteness can be imagined; but the actual admixtures which I have described as dangerous bring with them corresponding changes of physical character.

3448. I understand you now to say that minute portions of impurity might be mixed with the lymph; can you tell the Committee how much of the impurity would act detrimentally?—In the only experiments I know where syphilitic blood has served to convey infection, the blood has been in quantities amply visible to the naked eye.

3449. Can any portion of blood be admixed with the lymph without his knowing it?—No such portion as I have spoken of.

3450. Not a minute portion?—To the best of my belief, not. A vaccinator drawing lymph knows of course whether he draws blood.

3451. Nor of pus?—The rule about pus is a different one; pus would scarcely admix itself with lymph except in certain late stages of the vaccine vesicle with corresponding changes in the parts around; and when those changes have occurred, the vaccinator does not take lymph.

3452. Do you give it as a fact, or as an opinion, that blood could not be mixed with the lymph without being detectable in the ordinary course of vaccination?—Blood could not be drawn without the operator's seeing that blood was drawn.

3453. Is that a fact or an opinion?—It is an opinion; it is not history.

3454. Before we legislate and bring the weight of the law to bear on an offender, are we not bound to supply him with the article which we profess to supply?—Yes.

3455. Then should not legislation rest upon something more than a mere opinion, and should it not be an indisputable fact?—Your question, as I understood it, was not for fact but for opinion, and I answered it accordingly: if you put it to me, as a question of fact, whether I have known blood in lymph without the blood being detectable, I have not.

3456. I do not put it in that way; I put it exactly as I stated it?—But you put to me a question of opinion, and I answer it as a question of opinion.

3457. Do you think that we are justified in compelling, by force of law, the people of this country to accept from us what we cannot guarantee that we are giving them?—It depends upon what it is; you put it as an abstract question; do you wish me to answer it as an abstract question?

3458. You stated it as an opinion, did you not, that blood cannot be admixed with lymph without being detected?—I gave it as an opinion; I do not mean that there might not be facts opposed to me; but I think that if Government could not reasonably guarantee that it gave pure vaccine lymph, it should not force the public to accept it.

3459. With regard to public vaccinators, I think I understood you to say in your examination-in-chief that law-administering public vaccinators were not always up to their duty?—I think I spoke retrospectively.

3460. What would you say with regard to that point at the present time?—I should not pretend to say that all of them were at a high level, but that the public vaccination of the country is very fair; it varies, of course.

3461. Do you think that you are supplying to the country now men fully adequate to their work?—There are different qualifications among them; I should not speak of them as all of the same sort.

3462. And the fact that any man possesses a diploma is not evidence of his qualification or fitness in the matter of vaccination?—In my opinion it is not.

3463. Do you take no other security for his fitness than his diploma?—Certainly we do. Feeling that that was insufficient security, the Privy Council about 12 years ago required that no one not already in the profession should be eligible for the appointment of public vaccinator, unless he produced, in addition to his diploma, a special certificate of his proficiency in vaccination.

3464. From what authority?—From public vaccinators

vaccinators specially authorised to give, after examination or education, such certificates.

3465. From his fellow vaccinators in the same locality?—No, he could not have fellow vaccinators until he is a vaccinator.

3466. I admit your very nice criticism, but would he receive his certificate from those who were vaccinators in the locality where he sought the appointment?—No; the Privy Council established a limited number of so-called educational vaccinating stations, where any one could go to learn to vaccinate, and where also men who had learned elsewhere could be examined. No new doctor becomes a public vaccinator excepting with a certificate from one of those authorised examiners. An educational station of that sort is established in each principal town where there is a medical school, so that the medical students, while pursuing their other studies, may systematically learn to vaccinate. The arrangements are very fully set forth in my second annual Report, and also are briefly explained in the extract which I have laid before the Committee from my last year's Report.

3467. Then may I understand (to take my own town as an instance) that all the public vaccinators in my borough have been examined in that way?—It depends upon their date of qualification; if they have entered the profession within the last 12 years, that would be so.

3468. But if they obtained their diplomas at an earlier date, they have not been examined?—No.

3469. I think you have stated to the Committee, that there was so much difference between vaccinators in point of skill, that one medical man would fail to vaccinate while another would succeed?—It is so; that is a matter of manipulation.

3470. Then if you do not supply an adequate manipulator, you cannot give protection in that special case?—Quite so.

3471. Then even the law which you enforce by penalties cannot be obeyed or made effectual?—I think there is no great break-down in that direction.

3472. As with lymph so with vaccinators, you will say, I presume, that unless the law supplies us with an adequately qualified and competent man, the law has no right to force his services upon us?—Quite so.

3473. And the conditions precedent to all law upon the subject would be those that I have mentioned, would they not?—Quite so; and in order that there may not be any doubt as to whether I have kept that in view as a very important subject, I should be glad to read, with the permission of the Committee, a very few lines from my Report of 14 years ago, when I first brought this matter, as to which you are examining me, under the notice of the Government; "Surely nothing can be more obvious than this; that if the State professes to vaccinate the people, and above all if it compels the people to be vaccinated, it must take every possible security for the excellence of the vaccination which it offers."

3474. Will you not go further than that, and say that it must be absolutely a fact and not a thing of opinion, that the thing it offers is what it purports to be?—I go on to say, "The Legislature has hitherto not recognised that there is such a thing as bad vaccination."

3475. But the profession, I suppose, will not back up the Legislature in that?—Here is the

language which I used to show that I have not shirked the difficulty of the case. "Indeed in large part, vaccination is certainly good, otherwise small-pox could not, within half-a-century, have been, as it has been, rendered comparatively infrequent and innocuous; yet that there is current in England and Wales" (this was 14 years ago) "not only an appreciable amount of utterly incompetent vaccination, but a very considerable proportion of second-rate vaccination, is quite certain"; and then I give Mr. Marson's evidence at the Small-pox Hospital, as to the large quantity of unsuccessful vaccination which had been current. In 1859 we set to work to get that amended, and I hope with great success.

3476. Then I think that I may congratulate myself on having you on my side, when I say that the compulsion which existed at that time was an intolerable injustice, and contrary to the principles which you enunciated in that report?—I think that it was premature, and that the other action, instead of following, should have preceded it.

3477. Then unless the defects indicated are now remedied, compulsion would still be premature, would it not, putting it strictly?—The case is not quite the same now; those defects are in great part remedied, though I will not pretend to say that no trace of them remains; and on the other hand it must be remarked that to go back from the course which the Legislature has taken would involve enormous fatality from small-pox.

3478. Having done wrong, they must stick to it; you think that would be the lesser evil of the two?—I think it would be immeasurably the lesser evil of the two; particularly as your wrong of 1853 has for many past years been in rapid course of extinction.

3479. As a general principle, I think you will also concur with me that there should be absolute security against the propagation of any other disease by vaccination?—The utmost possible security.

3480. Will you not go further than that with me, and accept the principle in its breadth, that if disease is propagated by vaccination, vaccination is a wrong?—No; to that extent I do not go. An occasional fact of the kind would be a deplorable fact where it occurs; but if it should be a fact that once in a million times vaccination is the bringer of definite and even fatal mischief to a child, surely that is as nothing against the good which vaccination does; and I cannot say that vaccination is a wrong on account of any such fragmentary evil.

3481. That is the extreme case which you put; but supposing that there were in Paris at a given time 450 cases of syphilis communicated by means of vaccination, what then?—I need not suppose what notoriously has never been. In incomparably the worst case known to me as having occurred in Paris, the dreadful and scandalous case of which I spoke in my first examination, the sufferers were not, I believe, quite a dozen. But if 450 cases of infection with syphilis had happened in Europe during the 73 years since the discovery of vaccination, that proportion would not relatively be more than a trifling, though doubtless so far as it goes a lamentable, drawback, from the advantages which vaccination in this time has conferred on tens of millions in Europe.

3482. Are you aware to what time, or to what district, the 450 cases apply?—I presume that it

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cannot refer to anything less than a collection of all reported cases.

3483. You think it is not limited to Paris, or to France?—No.

3484. Then the extent to which disease is communicated by vaccination would be the measure of your approval or disapproval of a compulsory law of vaccination, would it not?—Yes; I am quite of that view.

3485. Erysipelas results very often from vaccination, does it not?—No; erysipelas cannot fairly be said to result very often from vaccination. Re-vaccination, properly performed, is rarely followed by erysipelas; and primary vaccination, properly performed, still more rarely. As regards the local effects of vaccination properly performed, I draw a distinction between vaccination and re-vaccination. Re-vaccination very much more frequently than primary vaccination does give local trouble; but re-vaccination does not come under the compulsory law.

3486. Tubercular disease is communicated by vaccination, is it not?—So far as I know, certainly not.

3487. That is to say, you deny it?—Yes; I do not think that there is the smallest reason to suppose that it is so.

3488. Then is there not very much difference of opinion even amongst medical men of standing as to the extent to which disease is communicated by vaccination?—I think not. I think that among educated medical practitioners none would, in the matter of syphilis, for instance, go further than I go; I think that probably I go to the very utmost that any educated medical practitioners who have really given attention to the subject would go.

3489. Did I not understand you to say that contention and discussion ran high in Paris on the subject?—On the subject of syphilis, yes.

3490. I suppose that the medical profession does not know much, and would not pretend therefore to teach us much, how vaccination operates on the human system, or as to what I may perhaps call the philosophy of vaccination?—We may speculate on such subjects, but we guide ourselves by the practical results. We proceed empirically and not theoretically in the matter. But, as to the speculative question, no doubt many of us have a very definite theory of the mode in which vaccination operates, namely, that cow-pox is a modification of small-pox, and that its protectiveness is, as has been already suggested in a question asked to-day, the same in its nature as the protectiveness of previous small-pox, but the degree of protection less complete.

3491. That is rather the result than the operation; but can you tell us how vaccination operates on the human system?—No.

3492. Then all we know is from experience and observation?—Quite so; and that is the best of all teaching.

3493. I presume that it does not require very much scientific investigation to be an accurate observer; it requires more honesty than learning, does it not?—It requires honesty and intelligence and opportunity.

3494. I think you stated, when speaking of the conveyance of syphilis, that there were many sources of fallacy?—Yes.

3495. The more sources of fallacy there are the less ground is there for compulsion, I presume?—When I spoke of fallacy on the subject of syphilis, I meant that people have on many

occasions supposed that syphilis had been given by vaccination, when it had not been given by vaccination, but had been inherited by the infant from one or both of its parents; and the existence of such fallacious and deceptive cases on record would certainly not be a reason for giving up compulsory vaccination.

3496. But whether or not there was fallacy in such cases would be a matter of opinion?—We use the word “opinion” perhaps, in rather different senses; but the question of fallacy would be a matter of judgment and a matter for proof.

3497. Where there was room for a difference of conclusion?—The proof appeals to the same sort of mental faculties as the proof that the three angles of a triangle are together equal to two right angles. If you can say that the one is an opinion, you can say that the other is an opinion.

3498. Those are fair matters of opinion, are they not, when you are seeking a basis on which to rest a compulsory law?—The cases to which I refer are susceptible of proof.

3499. Then admitting, as you do, that syphilis may possibly be conveyed by vaccination, let me ask you whether or not syphilis may exist latent in a child without being obvious to the vaccinator?—If I am asked whether inherited syphilis capable of being propagated by vaccination may exist without being obvious to the vaccinator, I am not able confidently to say that the vaccine lymph unmixed with blood or pus, either from such child as you suppose, or even from a child with actual signs of syphilis, would convey syphilis.

3500. But your answer is very limited; you are “not able to say;” so that the possibility is otherwise, even in your own view. Do you mean that you have not evidence on the subject?—Yes. When, however, I state that “I am not able to say,” perhaps I may without arrogance also submit that I have studied the subject.

3501. And the result of your study is an indefinite conclusion, is it not?—As to even a possibility.

3502. Although you have spoken strongly in favour of the present law, you nevertheless do not regard it as satisfactory, I think?—Satisfactory is a very strong word; but I think it a fairly satisfactory sort of law.

3503. You have heard of a man named Lawton in Derbyshire, who has been convicted 10 times, I think, and imprisoned four or five times, because he refuses to obey the law, which orders him to have his child vaccinated; do you regard that as satisfactory?—The case no doubt has its difficulties; but I suppose the man really, while in certain points of view a subject for commiseration, takes a pleasure in his struggle against the law though it causes him a sort of martyrdom.

3504. That is another opinion, is it not, which rather casts an aspersion upon his character?—I mean none. When individuals set themselves up to struggle against the law, to see which shall conquer, the individual or the law of his country (I do not say it with any wish to speak disparagingly of this particular person, but speaking generally), I believe there is in such cases often a strong dash of conceit which makes the martyrdom less severe than it might seem to outsiders.

3505. I suppose that you would carry that further, and apply it much more extensively than you would to this man Lawton, would you not?—I wish that Mr. Lawton, or anyone in his position,

position, could be let out of it. And in that point of view I very much liked your proposal of last year to limit the number of orders which a justice may make under the Act on a parent whose child is unvaccinated; only that, in order to be just to the child, your proposal seemed to me to want a rider. If the parent, in spite of a *bonâ fide* penalty, will not have his child vaccinated, and the State, for reasons of its own, prefers not to press indefinitely for successive penalties, then, it seems to me, there must at this stage of the case be substituted a new view of the parent's responsibility. The State is ready to give the child a protection against small-pox which shall be nearly absolute, and with an almost absolute certainty against the vaccination doing the child any harm; up to a certain point, under your plan, the State would still require the parent, under penalty to adopt this protection for the child; but if, beyond that point, the parent refused to give his child that particular protection, he must, I would submit, be deemed to have accepted, instead of his former obligation, a special responsibility for otherwise guarding his child against small-pox. Let him now do that in his own way; but if he fail in the duty, and the child contract small-pox, let him, without fail, be imprisoned for that failure of duty to protect his child. That would be an intelligible position. The State can protect the child against small-pox almost absolutely up to 15 years of age, and can give that almost absolute protection with almost absolutely no incidental danger to the child. That being what the State offers, I cannot conceive that, with knowledge such as it is, the parent ought to have the option of leaving the child to have small-pox. If the State is to take care of the defenceless parts of the population, let the point of view of the children be for a moment taken. If they could speak, surely they would remonstrate against being left to undergo a disease, which, out of any three of them it attacked, would, as a rule, kill one, and perhaps blind or deafen or otherwise mutilate the others.

3506. But you have told the Committee in the first place that you do not give absolute protection even against small-pox; in the next place the man himself does not believe in it; and in the next place you have told the Committee that you may kill his child through the process of vaccination. May not death result, not from vaccination itself, but from its inducing some other disease which may result in death?—As an infinitesimal possibility in the case, yes. But in the view which I take of the whole question, I make full allowance for the microscopical dangers to which you refer.

3507. Alderman Carter.] Do you know, of your own knowledge, a single case of death as the direct result of vaccination?—As I stated in the early part of my evidence, as the direct result of vaccination, no; as the indirect result, yes; for instance, it has happened (I am speaking now of the rarest experiences of medicine) that a person vaccinated has subsequently caught the other contagion of erysipelas (not a mere red arm, which is sometimes too easily called erysipelas), and in some such cases that death has resulted.

3508. Mr. Candlish.] You recognise the fact, do you not, that the law does not now secure vaccination, although it punishes for refusing to vaccinate?—The law does, in an individual case, here and there, fail to procure the vaccination of a child; but I would answer a little more widely;

referring to some illustrations which I have before me of the working of the Compulsory Vaccination Act amongst large populations. Here I have the working of the Act in Leeds during the year from 1st April 1869 to 31st March 1870, in a population of between 117,000 and 118,000. During the year there were born about 5,500 children; and of those, within the time to which the inquiry relates, 4,681, that is to say, 85 per cent., had been vaccinated. A certain number had died before vaccination, namely, 12½ per cent.; 2 per cent. had migrated before vaccination; a small fraction of cases remained unvaccinated, because the vaccination had been legally postponed on account of health; and thus, in brief, of that large number of 5,500 births in Leeds, only 2 in the year were unaccounted for. There is no trace of persistent disobedience. In Wigan, again, with a population of 44,000, the births in two years, from October 1868 to September 1870, were 3,485, again a large number of births. Of those births, 88½ per cent. had been duly vaccinated; 9 and a fraction per cent. had died before vaccination; 2 per cent. had migrated; 2 per cent. had been postponed for unfitness, and none were unaccounted for. In Exeter, with a population of between 33,000 and 34,000, there were 1,084 children born; 81 per cent. were vaccinated; 11 and a fraction per cent. died before vaccination; 6 per cent. had migrated; 1½ per cent. had been postponed; and none were unaccounted for. In Lancaster there were 666 births from 1869 to 1870; 88 per cent. were vaccinated; nearly 8 per cent. had died before vaccination; nearly 2 per cent. had migrated; and 2¼ per cent. were postponed or unaccounted for. In the whole Wigan Union, of which the population in 1861 was 94,000, 10,982, or nearly 11,000 births, were registered for the two and a-quarter years, ending 30th September 1870, the whole of which, excluding deaths and removals, were registered as vaccinated by March 1871, except 114. In Ashton-under-Lyne Union there were 9,349 births registered in the two years ending the 30th June 1870: excepting deaths and removals, there were registered as vaccinated all but 332; and half of the default fell among the 1,450 births of one sub-district in which the registrar had been ill. In an examination recently made of children in the schools in the borough of Wigan by the registrar, there were examined and found vaccinated 6,024, and unvaccinated 52, children; 27 of the 52 unvaccinated having been born out of his sub-district; certificates of the subsequent successful vaccination of 46 out of the 52 unvaccinated have since been received. Those are illustrations from information in our office, which will show how very little popular resistance in large populations there is to the enforcement of the law.

3509. Do you know the number of prosecutions or summonses?—I do not.

3510. Then you infer that if the law merely inflicted one penalty, and gave a discharge in respect of that child, vaccination would be pretty nearly as prevalent as ever?—No; I am not prepared to say that as regards one penalty. If you imposed one *bonâ fide* penalty it might be so; but I should be very sorry to see a system of one *bonâ fide* penalty, which would mean that in every case of mere indolence and procrastination, the parent would have to pay perhaps 17.: I think that would be very hard upon the poorer classes. If, on the other hand, you had merely a sixpenny or other nominal penalty, then, when there is an organisation to defeat the law, of course

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Mr. Simon, course those sixpenny penalties would be paid
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only one penalty for that reason. You would
be in a dilemma; but if you have a limit to two
penalties, the first of which might be merely nominal, and the second, if the magistrate saw fit, the legal maximum, then I think all useful purposes of money-penalty would be fulfilled. The martyrs are in quantities quite inappreciable.

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3511. Mr. Cave.] You have heard or read the evidence of the many cases which have been brought before the Committee of fatal and injurious results after vaccination, have you not?—Yes.

3512. Should you attribute those cases to the inefficiency of the vaccinators, which you mentioned just now?—I have a difficulty in answering in a lump. Would you refer to particular cases?

3513. Take the case of Mr. Frederick Covington, of Northampton, for instance, which I happen to have opened upon at Question 2135. What have you to say upon that case?—The statement in answer to Question 2100 is as follows: “Mr. Wiggins, of Bradshaw-street, Northampton, had a daughter vaccinated when 12 months old; she was quite well at the time of vaccination, but five days afterwards syphilitic appearances presented themselves.” I have not the least hesitation in saying that that syphilis must have been a previous disease of the child, and could have had nothing to do with vaccination, whether skilful or unskilful.

3514. Does the same observation apply to the case mentioned in answer to Question 2103, Mr. Covington’s own case?—The disease may or may not have been as described, but I see absolutely no reason to suppose that it had anything to do with the vaccination.

3515. Taking the cases generally, should you suppose that there are as many inefficient vaccinators as would account for the cases which have been brought before us?—The cases which have been brought before the Committee, except certain well-known cases brought from books which are known to all educated members of the profession, have not seemed to me to hold water: some of them, to which I have referred before, are manifestly, on the face of them, not credible as cases of injury from vaccination.

3516. Your answer would be that there are not so many inefficient vaccinators as would account for those cases?—I do not find it requisite to account for those cases by any reference to the quality of the vaccination performed.

3517. Has there not been a great change of opinion among medical men consequent upon this present epidemic?—Not that I am aware of.

3518. For instance, has there not been a change of opinion as to the length of time for which vaccination is efficacious?—I think not; I am not aware of it; but we are not in a position, I think, yet to speak confidently of the experiences of this epidemic; we have not yet got the statistical results.

3519. Has it not been found that previous small-pox was not so much protective as people believed?—I do not know what additional facts upon the subject this epidemic will give, but it was already well known that previous small-pox is not an absolute protection against second attack.

3520. Is previous small-pox as protective as vaccination?—It is more protective.

3521. Will you explain upon what grounds?—I can only explain it on theoretical grounds,

which, probably, are not worth much. The theory to which I have referred of the protectiveness of vaccination is that it is a modified small-pox, and the modified small-pox appears not to protect so completely as the natural small-pox against a repetition of the disease.

3522. We have heard statements that cow-pox and small-pox have been seen together on the same patients, and that this is a proof that cow-pox is not a protection against small-pox; how do you answer that, or can you answer it?—Yes, that is very easily answered. It is the familiar case of a person being vaccinated when already the small-pox had got possession of him, and when vaccination is too late for protection.

3523. We have heard it stated as a ground for believing that syphilis has been communicated by vaccination, that the parents of a child had been examined, and no syphilis had been found in them; could parents have syphilis without its being distinguished by medical examination?—A syphilitic child may be born of parents who do not at the time show outward signs of syphilis.

3524. We have heard it stated that the prevalence of badness of the teeth in the present generation is caused by vaccination; is that a general opinion?—I have no reason to suppose that more people have bad teeth now than had bad teeth in the last century, nor if I knew it to be the fact should I see any reason from any such knowledge as I have for connecting it with vaccination.

3525. In the answer to Question 2135 as to Mr. Covington, an opinion is stated that unsuccessful vaccination preyed upon the vitals; do you consider that unsuccessful vaccination is more injurious than vaccination which takes?—No; I have no reason to suppose that inoperative vaccination is more injurious than operative vaccination.

3526. If it does not have the effect which it is intended to have, you do not think that it is possible that it may have some effect which it is not intended to have?—No; I do not.

3527. We have been told that 8,000,000*l.* have been spent upon sanitary improvements; have those sanitary improvements kept pace with the increase of population in the towns?—The sanitary improvements of the country have, I should think, not nearly kept pace with the increase of the population.

3528. We are told that the general death-rate has not increased, but that infant mortality has increased throughout the country; is that your opinion?—I am particularly anxious that on subjects of this nature the Committee should rely rather on the statistics which the Registrar General can give than on the statistics which I can give; but so far as I know, the mortality of children in different places in the country, taken respectively, has not increased; though, if you take the mortality of children throughout England in the lump, a higher infantine death-rate may or may not appear to exist. I do not know how the latter fact might be, and I cannot speak confidently as to it; but the way in which to judge infantine mortality for a practical purpose like the present is to break England and Wales into parts, and examine many of the parts separately. London would be a capital specimen to take for such an examination: and, in London, so far as I can judge, there has not been an increase of infantine mortality; but on the contrary, there has been a diminution of it.

3529. Has

3529. Has the death-rate of adults in London also diminished?—Yes, I think it has.

3530. Do you know whether the two are proportionate to one another, or whether the death-rate of adults has diminished more than that of infants?—I am not aware of such a difference; I have not means for the comparison separately worked out.

3531. Do you know of any town in which the death-rate of adults has diminished, while that of infants has increased?—I cannot quote any such; but there may be many towns where, at all events, the mortality of infants has disproportionately increased; I would not absolutely say that there are many towns in which the mortality of adults has gone down; but that there have been places where the mortality of the children has disproportionately increased, I have little doubt; infant mortality will range with the employment of women in industry.

3532. You confine that, I presume, to the manufacturing towns where women are employed in factories?—It would apply also to agricultural districts, where women are employed in agriculture; some of the largest infantine mortalities that we have are in agricultural districts.

3533. In the case of a person having small-pox, and communicating it to others, does the intensity of small-pox in the place increase in proportion to the number of people who take it; can you artificially produce an epidemic in any village, for instance?—An epidemic of small-pox in a place is merely the presence of a large number of cases of small-pox; and if you went round the village, and inoculated the unprotected people with small-pox, you would create an epidemic. In that sense you can artificially make an epidemic.

3534. Supposing that a person with small-pox comes into a village, and gives the disease to somebody else, or to two or three persons, is it more likely to be fatal, and to become of a worse type as others take it?—I have no evidence that it is.

3535. In such a case as that, would not non-protection be a greater crime against the rest of the community than it would be if it were not so?—Yes, but I am not aware that it is the case.

3536. Do you think that if the whole population of a village took small-pox, it would be probably of the same type as in the case of the person who first brought it into the village?—A person coming into a village with small-pox in any degree, whether slight or severe, starts a contagion which will affect, according to their respective susceptibilities, those whom it at all affects. It will not depend upon the severity of his small-pox whether their small-pox is severe or slight. Whether their small-pox shall be severe or slight will depend upon their individual constitutions.

3537. But can a large number of persons getting the small-pox infect the air of a place, in the same way as they can infect the air of a cabin or of a room, and so (as I said before) artificially create an epidemic?—They can only infect it, so far as they, or their clothing, or bedding, or matters which have been in contact with them, are among the population. They do not, so far as I know, produce a generally-diffused small-pox atmosphere. In a great epidemic of small-pox, there are two sorts of influences at work; one of which we can accurately measure, and the other of which we cannot accurately, but can only vaguely, measure. By the latter I mean the external state of things, whatever it may be, which we call

the external epidemic influence, and which enables the contagion when introduced to flow through the population more easily in one particular season than in another season; and then, secondly, there is the influence of individual exposure to contagion.

3538. Is there nothing beyond that?—There is nothing known to me beyond that.

3539. *Chairman.*] A good deal of mention has been made with regard to your answers to the questions which I put to you in the earlier part of your examination in reference to Holland. I understood, when you answered the questions, that you did not intend to quote Holland as a case in which it was clear that more unvaccinated persons had died than vaccinated persons, but simply as a case to show that small-pox was not a declining disease as an epidemic?—Quite so. That was the sense in which I referred to the present experience in Holland.

3540. In fact, my question was this: "Evidence has been given in the course of this inquiry to the effect, that small-pox is a declining disease in itself; are you of that opinion?" and I understood you to adduce the case of Holland as a proof that small-pox was not a declining disease?—Quite so.

3541. Allusion has also been made to a remark which you made with regard to the motives that might possibly operate in the case of some of those persons who object to vaccination. I wish to know whether your remark to that effect, did or did not arise from some such statements as I will now read to you from a paper which I am informed had been circulated to a large extent at Wolverhampton, and papers similar to which I have often seen. "Whence comes consumption, now levelling more than fifty-five thousand annually, and many other diseases spread by the above practice, levelling more than sixty-eight thousand a year, a vast number of which ought to be returned, murdered by vaccination." It proceeds thus: "I cannot but call it a curse (you call it what you will) to be compared in its evil effects to the destroying angel, for it can with a great amount of truth be said, there is scarce a house where there is or has not been a death from vaccination." Was your remark founded upon your finding that you were often met in your attempts to introduce vaccination through the country by statements such as this?—It was. And generally, in my remarks on the character of the recent anti-vaccination publications, I referred to statements of that kind in various placards and papers with which the Committee are no doubt familiar, which are to a great extent anonymous; and also to publications which bear the names of witnesses who have appeared before the Committee; Dr. Pearce and Dr. Collins.

3542. I think I understand you to state that you believe there is no reason to suppose that consumption is caused by vaccination?—Not the least.

3543. Allusion has been made to a letter of Alexander Humboldt's. I understood you to say that you do not pay much attention to the opinion which he might have been supposed to have given against vaccination, because, eminent as he was, he was a very old man at the time when that letter was written. But I cannot find in the letter any opinion against vaccination, although I see a statement that he was at that time 90 years of age; will you be good enough to show me if there is in that letter any such opinion?—I find no such opinion; but I observe this passage

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Mr. Simon, in the letter: "My own personal opinion on this grave subject is, in consequence of the nature of my habitual pursuits, of no importance, and it only remains for me, in this matter certainly quite '*cosmique*,' as in many others of like generalisation, to say, with prudence, *Sento, ma non ragiono* [I perceive, but I do not reason]. That which concerns me more is to appeal to your benevolent indulgence, and that of the *spirituelle* Mrs. Anna Skelton Gibbs. Having all my life a horror of a secretary, a great abundance of letters, averaging to the number of 150 to 180 monthly, easily occasions irregularity in the correspondence of an old man of 90 years."

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3544. Do you find in that letter any statement of Baron Humboldt's opinion against vaccination?—Certainly not.

3545. Referring to questions put by the Honourable Member for Sunderland, with regard to the discovery of blood in the lymph, do you find, as an actual fact, that blood or pus is contained in the supply received by the Vaccine Institution?—It has occasionally happened that a tube is received tinged with blood, but such tubes are never circulated.

3546. The rule of the institution is never to circulate such lymph, I presume?—Certainly.

3547. Is the presence of blood or pus easily detected?—Yes: but in answering this question, I would not make it a question of what may be detected at the Vaccine Institution, but I would rather insist upon the precaution that the drawer of the lymph observes. It is an understood thing among good vaccinators that they vaccinate with lymph, and that they do not vaccinate with blood, and that if they draw blood they suspend their operations. They would not send lymph tinged with blood. It may occasionally happen that that precaution is neglected, but it never ought to be. I think it important that a vaccinator should never draw blood with his lymph, and I think that is generally recognised. I look upon it that now for some years the profession has had the means of knowing quite well that, either in vaccination or in any other way, to inoculate with lymph admixed with syphilitic blood might be a source of danger. Of course lymph for vaccination ought never to be taken from children that

can even be suspected of syphilis; but, to make assurance doubly sure, I think it ought to be considered an absolute rule, even in taking lymph from apparently the healthiest subjects, that blood should never be mixed with the lymph.

3548. I think I understood you to state in the course of your evidence, that you do not consider yourself personally responsible for the introduction of the compulsory law of vaccination?—I do not. It was passed in 1853, and I did not become a servant of the Government until 1855.

3549. Whatever may or may not be your opinion as to how far it was advisable at that time to have such a law passed as we now have, what do you think would be the effect now of the abolition of all compulsory vaccination?—It would quite undoubtedly be the cause of many thousands of infantine deaths annually, and would also greatly promote the development of small-pox epidemics to the detriment of persons of all ages.

3550. Mr. Alderman Carter.] From whom do you receive this lymph of which you have just been speaking?—The lymph of the National Vaccine Establishment comes to us from selected vaccinators at large stations which we very scrupulously inspect, who have great opportunities of choosing from what arms to draw the lymph. We receive it from the best men we can find with large stations.

3551. Supposing that you were to receive a tube containing lymph mixed with blood, would you not regard that as an act of very great carelessness on the part of the person who sent it to you?—Yes.

3552. In the event of a case of that kind occurring, would any action be taken in reference to the person who so took the lymph, and sent it to you for general use?—Such a case has not come before me; but I should consider that the vaccinator who did so was not fit to continue to supply the establishment.

3553. Mr. Holt.] But would you consider him fit to continue to vaccinate?—Not on that plan, in the present state of knowledge. As at present informed, I would insist that, even in vaccinating from apparently the healthiest subjects, blood ought never to mix with the lymph.

Tuesday, 25th April 1871.

MEMBERS PRESENT:

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Sir Dominic Corrigan.

Mr. Hibbert.
Mr. Holt.
Lord Robert Montagu.
Mr. Muntz.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, Esq., IN THE CHAIR.

Mr. ROBERT HALL BAKEWELL, M.D., called in; and Examined.

3554. *Chairman.*] YOU were three and a-half years Vaccinator General at Trinidad, were you not?—Yes.

3555. And were you medical officer of health also for the Colony?—Yes.

3556. Do you wish to give any evidence with respect to your experience of the effect of vaccination in that Colony?—I am the district vaccinator for Port of Spain, and I have to keep up a supply of lymph for the island, and to distribute lymph, and to superintend vaccination generally in the country districts of the island.

3557. During the time that you were Vaccinator General of Trinidad, did you see any evil effects arising from vaccination?—I saw certain cases in which vaccination produced a great deal of illness. There was a great deal of inflammation locally of the arm, and a great deal of general fever occasioned, lasting for several days; and that was often alleged as an excuse by the mothers for not bringing children for inspection on the eighth day. At first I was inclined to regard it merely as an excuse, but on investigating several of the cases personally, and going to the houses of the children, I found they were really ill, and that it was not safe or prudent to bring them out on the eighth day for inspection.

3558. Can you give any special cases in which healthy children who have been vaccinated have suffered from any particular disease after vaccination?—Yes; there was one case in which I vaccinated a child with lymph sent out by the National Vaccine Establishment from England, and the child came out all over the body with an eruption, which lasted for about a fortnight, and then, I think, subsided; but I did not see the child after that time.

3559. What kind of an eruption was it?—It was a kind of papular or pimply eruption, of a bright reddish colour; the child had the eruption all over it when it was brought for inspection on the eighth day. Such eruptions are not uncommon, but I do not attribute anything particularly to the matter itself; I do not suppose the matter was bad.

3560. Have any other cases come within your special knowledge of disease which has been introduced by vaccination?—Yes; I have seen

another case in which the child is scarcely well now from vaccination performed about 12 months ago in Trinidad. That child had a perfectly healthy skin, and the skin has never been sound since; the child came out with a miliary eruption over the whole body after vaccination on the eighth day, and that was followed by pimply and pustular eruptions, especially about the face; the sort of thing that you have here (*producing a coloured picture*), but not in so severe a form. This is a specimen of contagious *porrigo* after vaccination, from the plates of Professor Hébra, of Vienna, the great skin disease professor. I have seen cases of erysipelas, one very severe case especially, produced by vaccination.

3561. Mr. *Candlish*] Was that in a child?—It was in a grown-up person.

3562. Was it a case of re-vaccination?—Re-vaccination in one sense of the word, but the primary vaccination had never been successful, had never taken.

3563. *Chairman.*] Have you ever known of cases of syphilis being introduced by vaccination?—Not personally. With regard to leprosy there is a very strong opinion prevalent in Trinidad, and in the West Indies generally, that leprosy has been introduced into the system by vaccination; and I may say that, as Vaccinator General of Trinidad, I found that all the medical men, when they had occasion to vaccinate either their own children or those of patients in whom they were specially interested, applied to me for English lymph; and that was so marked, that in one instance a man who had never spoken to me before, wrote me quite a friendly letter in order to get lymph from England, when he had to vaccinate his own child. It is quite evident that the only reason for wanting lymph from England must be that they consider it free from any danger of contaminating the system by leprosy, because, of course, there is an equal chance, and probably a greater chance in England, of the lymph being contaminated by syphilis.

3564. Have you had any experience of any case in which leprosy has been introduced by vaccination?—I have seen several cases in which it seemed to be the only explanation. I have a case now under treatment of the son of a gentleman

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man from India who has contracted leprosy, both the parents being of English origin. I saw the case of a child last year who, though a creole of the Island of Trinidad, is born of English parents, and is a leper, and there is no other cause to which it is attributable. Sir Ranald Martin, who is a great authority upon these points, agreed with me that the leprosy arose from vaccination.

3565. Mr. *Jacob Bright*.] Is he a physician or surgeon?—Yes; he is in the Indian medical service. I can only give you the information which I obtained from the child's father. The child's father said positively that Sir Ranald Martin stated that the child had got leprosy from vaccination, and Mr. Balmano Squire confirmed the statement the other day. You will find Sir Ranald Martin's opinion expressed in the Leprosy Report of the College of Physicians, which is before Parliament; he states in it that vaccination is one of the things against which you have to guard as one of the causes of leprosy among Europeans in India. Then I do not know whether you will consider the general opinion of the profession in the tropics (persons who have had much longer experience in the tropics than I have) as I have gathered it from conversation as having any weight, but there is a very strong feeling on the subject, and there is one fact which I think is worth communicating. In coming home this time I called on the Governor of Grenada to ask about leprosy in the island, and he told me that there were only five or six lepers in the whole of Grenada; he said also in the course of conversation that vaccination was practically not used there at all, but that he proposed to introduce a compulsory vaccination law in obedience to the circular of the Secretary of State for the Colonies.

3566. *Chairman*.] Was there a compulsory vaccination law in Trinidad?—Yes, there was, and I was employed to carry it into effect; but I found that practically I could not do so, and I preferred actually to pay the people to bring their children to be vaccinated than to incur the extreme amount of unpopularity necessary for carrying the Act into execution.

3567. What was the objection which the people had to having their children vaccinated?—The objection on the part of the negroes and the lower classes was simply laziness, I believe; but on the part of the educated classes it was the objection to having their children vaccinated from any creole child.

3568. Was the vaccination performed gratis?—Certainly.

3569. Were the richer classes also in the habit of having it performed gratis?—No, they generally got it done by private practitioners as they do in England. Of course the Compulsory Act applied to all classes, but they generally got it done by their own medical attendants, though in some cases they applied to me on account of my getting lymph direct from England.

3570. You also have a strong opinion that vaccination is not unattended by danger in the Colonies, have you not?—I consider that vaccination has been proved to cause death in some cases, though very rarely; and I hold that it is unjust to oblige a parent to submit his child to an operation which, however rarely, occasions death. We do not find it necessary in any other branch of medical practice to make an operation compulsory; there is no compulsory amputation ordinance or compulsory amputation law.

3571. But have you, in your own experience, known any death caused by vaccination?—Never.

3572. Have you any other special experience to state to the Committee with respect to vaccination?—I think, that speaking simply as a practical man, who has had the working of a compulsory ordinance, I should say that in Trinidad public sympathy is so much with offenders against this law, that, in the first place, magistrates will not punish except by the very smallest amount of fine possible. We found that a stipendiary magistrate, who was a Government employé, and therefore amenable to Government control to some extent, would inflict 6 *d.* and 1 *s.* fines upon the people; that every sort of loophole, and every sort of excuse was allowed in order to get the people off; and really, when you had summoned, perhaps, ten or a dozen people you could scarcely get a conviction out of the whole number, although all the cases were clear. Almost all the magistrates throughout the Colony were the same, according to my experience. They invariably let parents escape if they had their children vaccinated in the interval between the taking out of the summons and the appearance before the court.

3573. Was the result that a great number of children remained unvaccinated?—Yes; in the last year 1870, for which my report is made, as nearly as I could estimate, about half the children born were not vaccinated; in many cases none of the children, born in some of the districts, were vaccinated at all. There was another point too, and that was that we could not get information as to the residences of the people at all. In sending round to the people's houses, we found that they never seemed to live in the place where the birth had been registered as occurring; the neighbours would never give any information, and it was always denied that anybody of that name lived there; so that out of, I think, 32 cases of children unvaccinated, three only could be found seven months afterwards. Now I have no doubt that, in a great many of those instances, the people were really living in the neighbourhood where they had registered the birth, but that their neighbours simply denied the fact out of sympathy.

3574. Have you any suggestions to make as to any better mode in which public vaccination should be provided for?—Yes; I think that with regard to that, my experience in Trinidad would be of some use; I would no longer make vaccination gratuitous, except to absolute paupers, and to them just as other medical relief is granted, by an order from the relieving officer of the union. Then I would allow every practitioner, as at present, to vaccinate, but I would discourage as much as possible the vaccinations at large stations, where a large number of children are brought together, of whose antecedents nothing is known either by the vaccinator himself, or by the parents of the children who are vaccinated. The advantage of vaccination at small stations, or of house to house vaccination, is that, supposing you have a healthy child, the neighbours flock to have their children vaccinated from that child. You get an amount of evidence as to the children's antecedents which it is impossible to get at a large station, and besides, that kind of vaccination is much more popular with the poor than the other, simply because they know from whom their children are to be vaccinated. In that way I have done nearly all the vaccination

vaccination lately in Trinidad, by going from house to house.

3575. But, in going from house to house, do you take a healthy child round with you?—No; we go to a place, and find out a healthy child, and then we vaccinate that child. Then the next week we go to the same house, and the parents of other children will bring their children round, and if there is anything against the child, one is sure to hear it in the interval, or at that time; and, in that case, nobody will bring their children; or they will object openly to have their children vaccinated from that child. Once, in Trinidad, when I was going to vaccinate from a child which seemed perfectly healthy, my clerk whispered to me, "That child's aunt is a leper." Of course, I would not vaccinate from that child. That is the kind of information which you get when you vaccinate from house to house, or at small stations; and I believe that the vaccination performed in that way would be much more successful, and lead to much fewer accidents than when performed at large stations.

3576. Then I understand that you do not object to vaccination *per se*, but that you think it ought to be done in a much more careful manner than it is at the present time?—I think it should be done in a much more careful manner, and should not be made compulsory. I believe that if it is a good thing in itself, the good sense of the people will lead them to adopt it. In fact, until the compulsory law came into force, we had no trouble about vaccination; we had none of this excitement about it that there is now. Then, instead of the present system of only having a district inspected once in two years, I would have every district inspected once in three months, and the visit of the inspector should be announced publicly, so that the parents of children vaccinated may know when he is coming, and where he will be found, in order that they may be able to make any complaints they may have within a short time (that is, within a few weeks) to the inspector. The parents would then be much better satisfied; they would have an opportunity of showing their children, and if evil results had really taken place, it would be seen to at once, and the circumstances thoroughly investigated upon the spot. But at present you hear of a number of cases of so-called deaths, or evil results from vaccination, and the circumstances are not known or investigated properly at the time.

3577. Have you considered what a large increase of inspectors that system would require?—I think you would save the expense by the diminution of the cost of public vaccination, and by no longer allowing persons who can afford to pay for it to receive it gratuitously. I think the saving in that way would quite pay the salaries of inspectors. Then there was another proposal which I should like to see adopted, and that would be that a column should be added to the next census paper, showing whether the person was vaccinated or unvaccinated, so that we might have some basis on which to ground calculations as to the relative frequency of certain diseases in the vaccinated and unvaccinated. At present, we hear of the increase of certain disorders, and we have no means of ascertaining whether those disorders are really caused by vaccination or not, because we do not know how many people in the country are vaccinated and how many are not vaccinated. What we want is a basis upon which to calculate; that is to say, to know how many persons are vaccinated, and how many are not, in

the population. The returns from the workhouses and hospitals, distinguishing those who are vaccinated from those who are not, would soon give us a series of figures from which we should be able to calculate whether consumption and other diseases are really more frequent among the vaccinated than among the unvaccinated; and the point would then be settled on a firm basis.

3578. Would there not, among the most ignorant classes, be a great difficulty, even as regards a man's personal knowledge, as to whether he had been vaccinated or not?—I think not; I was examining some hundreds of recruits last year, of the very lowest class, for a London Militia regiment, and they all could tell me whether they had been vaccinated or not; you do not ask little children, because the head of the family who makes the return is supposed to state the fact.

3579. Lord *R. Montagu*.] Would you not judge by the cicatrix on the arm?—Yes; but I am not speaking of a medical examination, of course.

3580. Dr. *Brewer*.] How would your house to house vaccination enable the country to secure sufficient vaccine matter to supply to those who are without vaccine matter as vaccine matter constantly dies out; and without some centre for the collection and distribution of vaccine matter, how do you propose to supply that important point?—I do not apprehend that there would be any more difficulty than there is now; the person who vaccinated would collect the lymph in tubes as he went about as I do.

3581. As private individuals?—I do it; I supply the whole of Trinidad from house to house vaccination, and I find it much more effectual than the other way.

3582. Trinidad is not a metropolis or a large town, is it?—Port of Spain is a town of 20,000 inhabitants.

3583. But London has 3,000,000 inhabitants?—Then you would have more opportunities of getting vaccine lymph.

3584. *Chairman*.] I understand it to be your opinion that if every medical man were allowed to vaccinate in the manner which you suggest, the poorer classes would be able to know more as to the state of health of the child from whom the vaccine matter was taken than they do upon the present plan?—Undoubtedly; and I am sure that they would then be more ready to allow their children to be vaccinated.

3585. Have you had any experience at Trinidad of a severe epidemic of small-pox?—My personal experience of Trinidad does not go so far back, but I have examined into the statistics of an epidemic of small-pox which was extremely severe, frightfully severe, as all epidemics are in that island, owing to the entire neglect of the ordinary sanitary precautions. I could not give the exact date, but it is some 14 or 15 years ago. I wish to state that in my opinion the mortality from small-pox may be diminished very greatly by sanitary measures independently of vaccination. From what I have seen of small-pox in England, the mortality has been nothing like what it is in the present epidemic, and I attribute the excessive mortality now to the confining of people to the small-pox hospitals, which necessarily occasions a great increase of mortality.

3586. From your experience of Trinidad, do you think that the want of sanitary precautions increases the mortality from small-pox whenever an epidemic takes place, and that it is much more

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severe in places where there are low sanitary regulations, than in places where there are those sanitary regulations?—Unquestionably I think so. The want of proper drainage, and the want of cleanliness about houses and persons, all increase the mortality from small-pox, as indeed from all other diseases of the same class: we find that to be the universal rule.

3587. Lord *R. Montagu*.] You said that you were Vaccinator General at Trinidad for three and a half years, did you not?—I have been a Government official for three years and a half. I have been public vaccinator a little more than three years.

3588. How long is it since you have resigned that office?—I hold it now; I am on leave at present.

3589. Then perhaps you are not the Dr. Bakewell who applied to the Privy Council for an inspectorship under the Act of 1867?—I am. My health was very bad, and I applied for an appointment as inspector, wishing to exchange my present appointments which are more valuable, but in an unhealthy island, for one in England.

3590. I suppose that you would wish to carry out the Act of 1867 to the utmost of your power, would you not, if you got that office?—I am not a candidate for it now, and I have so far examined into the subject, that I could not become one.

3591. Was it last year that you applied for that office?—It was last year.

3592. Have you removed your name from the list in the Privy Council Office?—I had a letter declining to appoint me, and so I supposed that the matter was out of hand.

3593. How long ago was that?—About 9 or 10 months ago. My present appointment was much more valuable in a pecuniary point of view, but I wished to exchange, for the reason I have stated.

3594. Then, is it only since you were refused that appointment that you have seen that the Vaccination Act of 1867 was not a wise measure?—No; I had written a good part of this report before I left for England last year.

3595. Then, did you apply for the inspectorship to carry out that Act at the time that you thought that that Act was very detrimental to the country?—No, I was not aware that that inspectorship was to carry out the Act. I understood that it was to inspect the children's arms, to see whether they had been properly vaccinated, which I take to be equally necessary, whether there is compulsory or not compulsory vaccination. I was not aware that there was anything to do in the way of enforcing the Act.

3596. As you said that you did not know of any deaths from vaccination, I presume that you do not object to vaccination in itself, more especially as you hold the office to which you have alluded as Vaccinator General at Trinidad; but that your objection is more to the difficulties of administration in carrying out a compulsory law, is that so?—Yes, I do not object to the practice of vaccination, undoubtedly; I practise vaccination myself.

3597. One of the grounds of your objection was the difficulty of procuring information as to the residences of the various children who had been born, was it not?—Yes.

3598. You also stated, I think, another objection; you said you did not see why there should be a compulsory law for one kind of surgical operation if there was not a compulsory law for another kind of surgical operation; and as there

was no compulsory amputation law, you did not see why there should be a compulsory vaccination law. Do you not think that they are very different cases, inasmuch as children are compelled to be vaccinated in order to prevent them from being the focus of infection, and perhaps spreading illness and death to other children; while in the case of amputation, it would not do any harm to another person whether the limb were amputated or not?—That would depend upon what the disease was, for which the amputation was to be performed; if it were hospital gangrene or something of that kind, it would be spreading disease. But, however, I think that the hypothesis upon which you require a child to be vaccinated, is that vaccination protects from small-pox; and, therefore, whoever wishes a child to be vaccinated on that ground can protect himself by being vaccinated himself; if vaccination does not protect from small-pox, why make it compulsory? If it does, why oblige those who are unwilling to be vaccinated?

3599. You ask why, if it is a protection from small-pox, it should be made compulsory; cannot you imagine the case of some ignorant parents with a number of children, who refuse to have them vaccinated from some stupid notion that vaccination is of no benefit whatsoever; those children may then catch the small-pox and give it to other children, and cause the deaths of other children; do you think that would be right?—But they do not cause the deaths of other children who have been vaccinated, *ex hypothesi*.

3600. It would not do that, you think?—It ought not to do it.

3601. But if there were a number of those stupid parents, do you not think that their children might be decimated by small-pox, in consequence of their stupidity in not getting their children vaccinated?—Undoubtedly they might; but on the other hand, you do not interfere with the discretion of parents in other matters equally important to the health and life of their children.

3602. This is not a question of the health and life of the children of the parents who actually refuse, but of the health and life of the children of other parents, is it not?—I do not see how that can be; because, according to the hypothesis of compulsory vaccination, anybody can protect himself, and any parent can protect his children by having them vaccinated, and then he is quite independent of those stupid people who will not be vaccinated, or have their children vaccinated.

3603. Then you would, in fact, allow all the parents who did not get their children vaccinated to see their children killed off by small-pox, and thus learn by experience that small-pox is a deadly disease, and that there is a means of preventing it?—My theory is that the English people are gifted with common sense, and that they would adopt vaccination universally if they found it to be universally a protection against small-pox; and if they do not adopt it universally it is because they do not find it universally protective.

3604. Is it your opinion that it is not a universal protection?—In a large number of cases up to puberty it is, though I think it is failing; the vaccine lymph does not protect now so well as it formerly did; but still up to the age of puberty, it does protect in the majority of cases.

3605. Then those parents who do not get their children vaccinated are guilty of ignorance of the truth which you have just asserted?—They are

are either ignorant, or they hold a different opinion from me about the matter; I do not say that all people are ignorant who hold a different opinion from me.

3606. The opinion which you have expressed is either true or false, is it not?—I believe it to be true.

3607. Then those persons who differ from you, you believe to be ignorant of the truth?—I believe them to hold a different opinion from myself, but I should not like to use an offensive term like “ignorant” to persons because they differ from me; I am not infallible, and therefore I do not suppose I am always right.

3608. Doubtless, if you thought you were wrong, you would investigate the case with great attention in order to discover the error; but assuming that you are right, you believe that those other people are ignorant of the truth, and you therefore would condemn them to see their children die of small-pox and communicate the plague to the children of others who are equally ignorant?—Yes, I would certainly do that. It does not follow of course that everybody not vaccinated catches small-pox, and still less that everybody who catches small-pox dies.

3609. You propose not to make vaccination gratuitous except to paupers, do you not?—Except to paupers.

3610. With what object would you make people pay for vaccination?—I think that people, if they can afford to pay for it, should pay for it, as they pay for every other species of medical advice; I have no notion of giving people gratuitous medical attendance if they are in a position to pay for it.

3611. Agricultural labourers could, perhaps, ill afford to pay 2 s. 6 d. or 5 s. for the vaccination of their children, and then it would be a question for them whether they should not allow them rather to go unvaccinated, would it not?—But from my experience as a poor-law medical officer, agricultural labourers can always get an order for medical relief.

3612. You said you would make it gratuitous to paupers; do you think they would like to appear in the character of paupers?—They do appear in the character of paupers whenever they are sick; you never find an agricultural labourer who pays his doctor.

3613. In fact, it is to be a choice for the agricultural labourer whether he will be a pauper or whether he will not allow his children to be vaccinated?—A great deal of the vaccination that is done is not done by the public vaccinator; many medical men, rather than allow their patients to go to the public vaccinator, will do it for nothing.

3614. Of course if it were not gratuitous it could not be compulsory?—Of course not; that is a part of my scheme.

3615. In Trinidad, I understood you to say that you paid the parents to bring their children to be vaccinated?—For a time, when I was pressed for matter.

3616. Was that in order to get lymph?—That was in order to get lymph. I had to supply the district vaccinators for the whole island, and when my supply ran short, in order to get a sufficient number to attend, I paid them a shilling a-piece.

3617. Did you pay all indiscriminately who chose to come and be vaccinated, or did you only pay healthy parents to bring healthy children to be vaccinated, in order that you might get healthy lymph?—I was too much pushed to be able to do that; I did not take lymph from unhealthy

children, but I paid them all the same, because if I had made any exception they would not have come.

3618. But you discriminated between healthy and unhealthy children in order to take the lymph from the healthy?—Undoubtedly.

3619. I suppose it is your opinion that the lymph from an unhealthy child would communicate some disease?—I think it might.

3620. For instance, you gave us a case, I think, of a child whose aunt was a leper, and you said that you would not take lymph from that child?—Simply for the reason that it was possible that the child itself might at that time have been a leper, though without any apparent disease about it, and I would not run the risk.

3621. Then it is your opinion that vaccination may communicate the disease of leprosy if the lymph is taken from a person who has leprosy in his blood?—Yes.

3622. That is to say, there is some foreign matter communicated besides the lymph to the blood of the child who is vaccinated?—Yes, I think so; that is to say, in the ordinary process of vaccination. For instance, just scraping the lymph off the vesicle will bring away epidermic scales, and these may be introduced into the scratch (I always vaccinate by scratching or scoring), and in that way you may inoculate the child with leprosy. Experiments have been made which seem to show that with the pure lymph alone diseases are not introduced; but in that way, which is the ordinary mode of vaccination, it seems to me extremely probable that those diseases may be introduced.

3623. You spoke of an eruption in a child which you had vaccinated with lymph sent out by the National Vaccine Establishment; I presume you did not know from what child that lymph had come?—No.

3624. Then either it might have been lymph from a diseased child, or the lymph might perhaps have putrefied?—No, I think not, or there would have been some apparent change in it.

3625. It might have been lymph from a diseased child, perhaps, might it not?—It might; but I should not care to adopt that hypothesis.

3626. As we do not know anything about that lymph, I suppose that example proves nothing one way or the other?—I am only proving that from the operation of vaccination certain bad results may occur.

3627. But you did not say that it was vaccination with pure lymph that produced bad results?—No; but I apprehend that they would not send out anything but pure lymph from the Vaccine Institution.

3628. That is a hypothesis which might, perhaps, in one case fail, might it not?—Of course it might fail.

3629. Mr. Cave.] I see you mention that leprosy is occasionally caused by vaccination?—I say that that is my opinion; I do not give it as a positive fact; I believe myself that it is so, but I cannot positively assert it, because the period of incubation of leprosy is so long that you cannot distinctly trace the disease to the source in any case. For instance, in the case of hereditary leprosy, where we know that it must be derived from the parents, it may be years before the disease makes its appearance, and therefore it may be the same with inoculated leprosy.

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3630. Is leprosy a common disease in Trinidad?
—Very common.

3631. Is it common among the white population?—There are a good many cases; I know of several.

3632. How many cases of leprosy are there among the white population?—The cases are very carefully concealed, but I could enumerate six or seven; there are very few pure whites in the island without any mixture.

3633. But you take in the Spanish and French as well as the English?—Very few of the French and Spanish are pure whites; if you include those, there are a great many more cases.

3634. Would you say that the Spanish and French population are more mixed than the English?—Decidedly.

3635. Leprosy has various forms in the West Indies, I think, has it not?—Yes; it has two principal forms, anæsthetic and tubercular.

3636. But is it not the case that there is what is called elephantiasis?—Yes; that is the generic term for leprosy.

3637. But elephantiasis is generally applied in the West Indies, I think, to swelling of the limbs, what is called the “Barbadoes leg”; that is the ordinary meaning of elephantiasis, is it not?—Elephantiasis is a medical term.

3638. Elephantiasis is derived from elephant; is it not a swelling of the leg until it becomes shapeless?—Yes.

3639. That is the ordinary term in the West Indies for that sort of leprosy, is it not?—Yes, perhaps so; but I do not call the Barbadoes leg leprosy at all.

3640. What disease do you call it?—It is difficult at a moment’s notice to give a definition of it, but the two are completely distinct diseases; there is a common term applied to them unfortunately, but they are completely distinct diseases, pathologically speaking. The one is a local disease and the other is a general disease; the one is a disease affecting the whole system, and the other only affects the leg.

3641. But it is generally considered that they come from the same tainted blood, is it not?—No.

3642. Do you know what is called Coco Bay, in the West Indies?—I have heard of the term.

3643. You know the leprosy which destroys the face and fingers, for instance?—Perfectly well; I have seen hundreds of cases.

3644. That is very common in Trinidad, is it not?—It is very common in Trinidad.

3645. And in the slave colonies, I think, such as Cuba?—I am not prepared to say anything with regard to Cuba.

3646. Has it not always been stated that those various forms of leprosy are commoner in the slave colonies than in our own, and are occasioned by the diet of the people?—On the contrary, it has been stated to me by medical men who have resided in the island before and since emancipation, that leprosy is much more common now in Trinidad than it ever was during the slave times. It is the fact of the increase of leprosy being coincident with the increase of vaccination, and especially with the adoption of compulsory vaccination (because compulsory vaccination has been adopted for several years there) that has made people so extremely alarmed about their children being vaccinated from anybody with a leprosy taint.

3647. Then if it were known that in Barbadoes, for instance, leprosy has very much de-

creased since emancipation, would not that rather tend to diminish that alarm?—It would depend upon whether vaccination has been compulsory in Barbadoes or not.

3648. If you heard that in Barbadoes leprosy has very much decreased since emancipation, and that vaccination has been more carefully carried out in Barbadoes than in any other colony, would not that very much diminish the alarm in Trinidad?—It would, if it were known.

3649. Is it not so?—I do not know; I have never heard that statement before. My information on the point is derived from medical men in Trinidad and in Demerara.

3650. But not in Barbadoes?—Not in Barbadoes. In Barbadoes leprosy is increasing, no doubt. That I can speak to from the evidence in the Leprosy Report, and from the statement of the physician to the Leper Asylum, who told me himself that leprosy was increasing there. I visited the Leper Asylum in Barbadoes, and inspected the cases, and had a long conversation with Dr. Brown; I think it is.

3651. Is not that rather from the fact that cases are brought to the hospital which were formerly treated on the estates?—I should think in Barbadoes the cases are pretty well known.

3652. No doubt the cases are well known now, but before emancipation were not all those diseases treated on the estates?—I suppose before the leper asylums were established they were.

3653. Are you prepared to state, and can you bring any statistics to show, that leprosy has increased generally in our colonies?—I am not prepared to say that generally; I am only speaking with regard to Trinidad, Demerara, Barbadoes, and Jamaica.

3654. I have been in the colonies myself, and I have always understood that precisely the opposite was the acknowledged fact?—I think, if you will read the Report on Leprosy laid before Parliament by the Colonial Office, you will find that the medical men state that in Jamaica, Trinidad, Barbadoes, and Demerara, leprosy is increasing.

3655. Was not it stated, and generally believed, that leprosy was caused by feeding the slaves upon salt fish and salt meat?—The diet has an immense deal to do with it, undoubtedly; but it is also contagious, or, at least, inoculable.

3656. Is it proved to be contagious?—There is not the slightest doubt of it; I have no more doubt about it than I have of the contagion of small-pox; I have thoroughly investigated that question for myself.

3657. To what extent would you say that leprosy was contagious?—It is not contagious, I believe, to a person who is perfectly healthy, and living in a good climate, and all that sort of thing. I do not suppose that I am in any danger of catching leprosy from my patient here, but I consider that I should be in danger to a certain extent in Trinidad. I use very great precaution, and always wash my hands directly after touching a case.

3658. What treatment is now generally used for leprosy?—I believe it to be inoculable: but then a thing which is inoculable in the West Indies is practically contagious, because the insects carry the matter about from one person to another; the mosquitos, for instance, will bite a person on an ulcer, and remove a part of the blood of one person and carry it to another.

3659. You would hardly call that contagion, would

would you?—In the strict medical sense of the word it is not contagion, but it comes to the same thing.

3660. It is inoculation, in fact, is it not?—It is inoculation.

3661. Mr. *Candlish*.] Against which inoculation the people cannot guard?—They cannot guard against it, so that it comes to the same thing; at least you can only guard against it by the same precautions that you take against ordinary contagion.

3662. Mr. *Cave*.] Then inoculation is more likely to take place there than it is here?—Undoubtedly.

3663. Have you left Trinidad altogether?—No, I am on leave of absence.

3664. Do you know Dr. Mitchell there?—Yes, very well.

3665. Have you ever talked this matter over with him, and do you know what his opinion is?—I cannot say that I do.

3666. He is a man of great experience and great knowledge, is he not?—He has been out of practice for many years now, but he had a great experience at one time.

3667. He has since been the emigration agent, I believe?—Yes; I should hold his opinion in great respect.

3668. If, as you imagine, leprosy is produced by vaccination, should you not expect it to be more frequent among the whites than among the blacks, because among the whites vaccination is more universally adopted?—Yes; but on the other hand, there is the counteracting influence of the good diet and the better sanitary condition altogether of the white people; they do not confine their diet to salt fish and plantains; they do not live in the sanitary condition that the blacks generally do.

3669. But would that make any difference with regard to the inoculation of leprosy?—I think so. If it did not, I should be in a very great fright, for I have inoculated myself several times with leprosy matter. I have inoculated myself four or five times at the Leper Asylum when I was physician there.

3670. Would not that show that any wounds were likely to turn to leprosy in a certain class of people?—No, I do not think that the actual wound takes on the leprosy character. The poison diffuses itself through the blood, and appears in blotches and stains; but I should not apprehend any immediate action on the wound.

3671. You do not think that any injury to a negro who is in a bad state of health would take that form?—No.

3672. Then when you said you had inoculated yourself, did you mean with leprosy matter solely?—I mean to say that I have had my hands with cuts on them bathed in the fluids of a dead leper.

3673. Mr. *Candlish*.] How long has vaccination been practised in Trinidad?—I apprehend more or less since it has been practised in England. I read of the vaccine lymph being brought across by the sailing packets in other days; before the steamers ran, at any rate.

3674. How long has there been compulsory vaccination law in Trinidad?—The first compulsory law was passed in 1864. Previous to that, there had been arrangements for supplying the people regularly with vaccine lymph.

3675. Leprosy is an old disease in the island, is it not?—Yes.

3676. Then how do you connect vaccination with leprosy?—I am not attributing the whole or even the majority of the cases to vaccination. I am only instancing vaccination as one mode by which leprosy may be conveyed. I am speaking of vaccination as conveying leprosy to persons who otherwise would not in all probability have caught it.

3677. Have you seen what you consider to be a case of leprosy resulting from vaccination?—Yes, I have seen several.

3678. Do you consider that the leprosy was conveyed by vaccination?—I was shut up to that by the fact that I could find no other reason for it. The conviction has been forced gradually upon my mind, and it was adopted only with reluctance, because there are certain pathological difficulties in the way of that supposition.

3679. What is the connection in the nature of the diseases from which you would infer leprosy from vaccination?—Simply this: that the fact that leprosy may be inoculated I consider to be proved as much as any fact in medical science can be proved. I could bring forward, if permitted, a series of cases from various writers which seem to me to produce an overwhelming body of evidence to that effect. Believing, therefore, that it may be inoculated in this way, I think that the process probably in many cases not of inoculating with vaccine lymph, but of dipping the lancet already dipped in the blood of the person who is being vaccinated, into the pustule of the child from whom the lymph is being taken, may result in the inoculation not of the person vaccinated, but of the person from whom the lymph is taken; I think it is more probable that the disease is diffused backwards instead of forwards, and so in many cases of syphilis that cannot be accounted for. The ordinary practice of vaccination is to take a steel instrument of some kind, and then to make punctures or scratches in the arm. Of necessity a certain amount of blood is shed during that process, and some of that gets on to the instrument, whatever it may be. This same instrument is then dipped into the pustule or vesicle on the child's arm, and, of course, a certain portion of the blood may, and probably does (at any rate, a few blood corpuscles may) remain in the vesicle; and in that way you may convey from the child who is being vaccinated a disease which it has to the child from whom the lymph is being taken.

3680. Then your theory is, that not the vaccinated child merely is contaminated, but also the child from whom the lymph is taken?—You may, if you are careless, draw blood, and you may with that blood contaminate the child you are vaccinating; but the most careful operators, as far as I have observed, use the same lancet for making the punctures or incisions that they do for dipping into the vesicle, and in that way without drawing blood in any way from the child from whom you are taking the lymph, you may infect that child.

3681. Your opinion is that disease may be given either way?—Either way.

3682. Do you concur with a medical opinion that has been put before this Committee, that lymph unmixed with pus, or with blood, can convey no disease whatever other than the cow-pox itself?—I do not; because I think, as I mentioned before, that the epidermic scales scraped off the surface of the vesicle, and which are ordinarily mixed with the lymph, may be the means of conveying the disease.

3683. Is that detectable in the lymph?—It would

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would be detectable under the microscope, but not to the ordinary eye.

3684. Not to the operator as he ordinarily vaccinates?—No; the lymph would be clear.

3685. But still you do not negative the opinion that pure lymph would not convey any noxious disease?—The facts are so doubtful that I should not like to give a decided opinion upon that point.

3686. The current medical opinion is to that effect, is it not?—I think the current medical opinion is doubtful.

3687. But if that be true it would really be no matter what disease the child had; if nothing but pure lymph was taken from its arm, no matter how it was diseased, the disease from which it suffered could not be conveyed, could it, in that case?—Of course if pure lymph will not convey any other disease, and if nothing but pure lymph is taken, then you cannot convey any disease by it; but I should doubt very much whether that is the case.

3688. If a child was suffering from syphilis or from leprosy, if nothing but the pure lymph was taken from that child so suffering, would syphilis or leprosy be conveyed?—On the hypothesis that you state, certainly not; it is not my opinion that nothing would be conveyed; I should say it was too doubtful; I should never dream of running such a risk.

3689. If that be true, disease is not to be apprehended at all?—If it were true, certainly.

3690. And whether the child were healthy or unhealthy would be totally immaterial, would it not?—Of course.

3691. You have not had a small-pox epidemic in Trinidad since you went there, have you?—No, not at all.

3692. Have you any information as to the proportions of vaccinated and unvaccinated persons, firstly, who took small-pox, and, secondly, who died of small-pox in the last epidemic?—I have not.

3693. From what you have seen, do you regard vaccination as a protection?—Yes; within the limits that I have stated.

3694. But your own opinion is that it may convey disease?—Yes.

3695. Then why would you vaccinate at all?—Because I think that it is worth incurring certain risks to avoid the risk of having such a fatal disease as small-pox; for instance, my own children I would vaccinate under the present conditions, if they were not vaccinated already, in order to save them from the danger of getting small-pox, running any risks that might be incurred.

3696. Of disease or of death?—Of disease or of death; because I consider those risks are not so great as the risks they run in a town like this, of catching small-pox at the present time.

3697. You say it has been undoubtedly proved that death has resulted from vaccination, do you not?—Yes, I believe that has been proved.

3698. Have you seen a death from vaccination yourself?—No, I have not.

3699. Upon what ground do you make the confident statement that death has resulted from vaccination, seeing that it has not come within your own observation?—On the same evidence on which I would make a statement that certain diseases which I have never seen at all have resulted in death; the ordinary evidence of the Registrar General's reports, for instance, and

medical books, and cases related by other medical men.

3700. From vaccination, or from disease supposed to have been induced by vaccination?—From vaccination itself, if you mean from the direct effects of the operation.

3701. Are you aware that Dr. Simon denies it?—No, I do not think he denies that.

3702. Can you cite, on any good authority, a case?—I could cite Dr. Seaton's own book. I think Dr. Seaton himself mentions that it may, in rare cases, be fatal. But I could cite the Registrar General's reports, which are laid before Parliament.

3703. But that is not medical or scientific evidence?—They are taken from the certificates of medical men. I had several cases that I picked out of the earlier reports of the Registrar General, especially where he gives copies of the medical certificates, which stated that deaths resulted from vaccination, or from mortification of the arm in consequence of vaccination.

3704. You spoke of the objections of the white population in Trinidad to vaccination; are their objections to vaccination itself, or to the source of the lymph, namely, the arm of the creole child?—To the source of the lymph.

3705. If it be true that you have no guarantee that you are using pure lymph, and that in the operation itself you may not mix the lymph with some impurity of blood or pus, and thereby convey disease, would you still vaccinate?—I would vaccinate if the parents wished it.

3706. You accept the fact that no operator can possibly guarantee that he is using pure lymph?—No operator can possibly guarantee that he is using pure lymph.

3707. And, for anything he knows, he may be inserting death in the child's system?—He may be introducing death or disease; but I should like to say, that of course that is a bare possibility—it is not a large possibility. It is just possible, but I do not think it is probable.

3708. But it is most possible, and, in point of fact, in your opinion, I think it is most likely, that some impurity must mix with the lymph?—If you call the epidermic scales from the skin of a healthy child impurity, undoubtedly.

3709. Do you call that impurity?—It is an impurity as far as regards the lymph.

3710. Then it is most likely that it will mix with the lymph, will it not?—It is very probable.

3711. It is also probable that that may convey disease?—It is possible that it may convey disease.

3712. *Chairman.*] You say that holding the opinion that the lymph may convey death or disease, still if your own children were unvaccinated you would not object to have them vaccinated?—Certainly not, under the present conditions; that is, living in England exposed to the contagion of small-pox, provided I had the selection of the vaccinifer, and performed the operation myself; but living in Trinidad, where you can keep off small-pox by quarantine, I should then think it of doubtful benefit; hardly worth the trouble, certainly.

3713. *Sir Dominic Corrigan.*] I believe it is generally admitted that there are some diseases of a febrile character, such as mumps, measles, scarlatina, herpes zoster, or shingles, which run through their course within a certain limited time, and the relation of which is very well known?—There are.

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3714. For instance, herpes zoster in eight or ten days; scarlatina in about the same time; measles within about the same time, and mumps within about four days?—Yes.

3715. Do you reckon vaccination or cow-pox in the same class, that is to say, do you consider that it runs through its stages within a certain time?—Certainly.

3716. Will you admit the fact that when a patient dies of measles or scarlatina, or any of those diseases which run their course in a limited time, the patient is marked as having died of those diseases?—Yes.

3717. Do you know any instance of your own knowledge where death from vaccination ever occurred within the limited time within which the disease runs?—I have already stated that I never saw a case of death from vaccination myself, therefore I can have no personal knowledge of it.

3718. Are you aware, or can you give the Committee any quotations either from the Registrar General's Reports or from any medical evidence, that death has occurred within the limited time during which vaccination runs its course in like manner as it occurs from measles or scarlatina, or any of the other diseases?—Yes. I have not the Registrar General's early Reports here, but I made a copy of some of the extracts from them. They are in the library, and I could find them.

3719. Is there within your memory any statement, or can you give me any fact in which death has occurred from vaccination within the limited time during which the disease runs its course?—Within say three weeks from the day of vaccination, until the scab has fallen off and the skin has resumed its healthy condition, I call that the limit of the disease. You cannot say that the disease is done with until the skin has resumed so far its healthy condition as it ever will do, but I say that until the scale falls off, the disease is not done with.

3720. I thought you admitted a short time since that the term within which vaccination runs its course is about eight or ten days?—No, the vesicle arrives at its perfection for taking matter from in eight days or thereabouts, but it does not arrive at its full maturity until it has become pustular, I consider, and then there is the period of decadence.

3721. Within what time would you say that the disease runs its course?—Within about three weeks.

3722. Are you able to state any case in which death occurred within that time from vaccination, and not from what you call a result, that is, from some other disease?—No, I am not.

3723. If I understand you rightly that you said that with regard to hospital gangrene an amputation might be justifiable if it were necessary to remove the limb in order to protect other persons from catching the disease?—I merely gave that as an illustration; it was a mere by illustration; it did not bear directly on the subject.

3724. Do you think that the operation in hospital gangrene would ever be justifiable in order to prevent any other men from catching it?—I do not think I stated that it would be justifiable on those grounds alone. I merely stated that that might be one of the reasons for which it would be desirable to amputate.

3725. Do you think it would be desirable to take off one man's limb to prevent another person

catching hospital gangrene?—That might be one of the reasons, but I should not think of taking off a man's limb simply for that reason.

3726. Then I think on the whole I may gather your opinion to be this: that, taking advantages and disadvantages, evil and good, if vaccination be well performed the advantages are on its side?—I think so.

3727. I think you stated that there was a desire to get the lymph from England, inasmuch as the lymph that was in Trinidad was not reliable; was that so?—Yes; at least that the lymph from Trinidad was suspicious; that they had a suspicion about it.

3728. I think you also stated that reliance could not be placed upon the way in which vaccination was carried out in Trinidad; I do not mean by you, but I mean that it was not fully carried out, from the dislike of the parents, and from the inability to inspect the cicatrices?—It is not well carried out, for one reason, because several of the vaccinators are not even professional men, but are persons selected simply from their happening to reside in the neighbourhood.

3729. And small-pox prevails as an epidemic in Trinidad?—It did.

3730. You also stated (and I am sure very properly) that the severity of the epidemic might be owing to bad sanitary conditions?—Certainly.

3731. Might not the inefficient way in which vaccination has been carried out in Trinidad be also an operating cause?—Undoubtedly, as tending to leave a large number of people unprotected.

3732. I think you gave it as your opinion that you would always leave it to the discretion of the parents to protect their children?—I did.

3733. Would you leave them to exercise their own discretion as to whether vaccination should be carried out or not?—Yes.

3734. And you think that there should be no compulsion over them as to how they treat their children in that respect?—Certainly.

3735. Would you extend that to the education of the poor and ignorant?—I think that is hardly a fair question; I am not prepared to give my opinion on the education question.

3736. I did not mean as to details, but is it more desirable to leave to ignorant parents the option as to whether they should or should not use certain physical means to rear up their children in health, than to leave it to them to bring their children up in ignorance?—I will give you my opinion for as much as it is worth; I consider that the action of Government in these matters is so objectionable that I would rather not have it; I think the less the Government has to do with the domestic affairs of the people the better.

3737. You said that you would not allow vaccination to be gratuitous, did you not?—Yes.

3738. A man earns 8 s. or 9 s. or 10 s. a week, and he has one or two children, or sometimes more; how is the vaccination to be done, supposing that he desires vaccination and cannot get it done for nothing?—I think I stated in answer to the honourable Chairman that, in those cases in England, a man would in all probability get an order for the vaccination just as he would for any other kind of medical relief; and if not, there are a number of charitable institutions which supply relief to the poor who are not absolute paupers, and no doubt if it became at all a public need, vaccine would be supplied as it was long before the Compulsory Vaccination Act came into force in England. I can remember the time when vaccination was gratuitously performed

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in large stations in London and it is so done to this day, I believe, without its being connected with the Poor Law in any shape or form; there are certain chapels where they have long had stations, for instance.

3739. Would not the fact that it was necessary to introduce compulsory vaccination, notwithstanding the great extent of those charities, show that voluntary efforts even on the part of the rich were not sufficient to carry out vaccination?—No; I do not think it was necessary to introduce compulsory vaccination.

3740. Mr. *Jacob Bright*.] Have you paid attention to the cases reported by Dr. Marone at Rivalta, and commented on by Dr. Henry Lee, in which several children died from syphilis produced by vaccination?—Yes; and also to a much larger number of cases.

3741. Do you believe that death ensued in those cases from vaccination?—Yes, I have no doubt of it; I have no doubt as to the facts. There is a much larger collection of cases than those at Rivalta. There are 258 cases in *Lancereaux's "Treatise on Syphilis."*

3742. Where did those persons live?—In various places; Italy, France, and Germany.

3743. There were many cases, in fact, where *Lancereaux* says that syphilis was produced by vaccination?—Yes.

3744. And where death ensued in consequence?—And where death ensued.

3745. Then you regard those, of course, as typical or representative cases; you would infer, if you could produce those cases, that there must be a very great number of cases that we have not produced and have no knowledge of?—I dare say there are other cases that we have no knowledge of; but I should think that there would not be a very large number of other cases, because probably such cases would come to light.

3746. Has your attention been called to any such cases that have occurred in this country?—Yes, recently; but I am not in possession of positive facts, that I could bring forward as evidence.

3747. Have you ever had your attention called to the answer made by Dr. Whitehead of Manchester, to Mr. Simon, where he says, "I have seen several instances of the transference of the syphilitic taint through the medium of vaccination, the lymph having been taken from a true Jennerian vesicle, or presumed to be so, at least in a tainted infant; and I have known eczematous eruptions apparently of a simple nature in this way reproduced, but not scrofula"?—No; I never read Mr. Simon's book.

3748. Do you know Dr. Whitehead of Manchester?—I know Dr. Whitehead of Manchester.

3749. I think he is not living now?—I am not sure, but he was a very distinguished man.

3750. What is your opinion of the necessity of re-vaccination?—I think that with the present lymph it is absolutely necessary, if you are to protect after the age of puberty.

3751. How often would you re-vaccinate?—Practically, I have re-vaccinated myself every time I have had to attend small-pox cases.

3752. But with regard to the public, how often would you recommend them to be re-vaccinated?—I really do not know how often. If there were an epidemic and anybody were in contact with cases, and it had been several years since re-vaccination had been performed, I should recommend them to have it done again; I think that the effect of re-

vaccination would probably die out after a time, just as the effect of primary vaccination does.

3753. What age would you consider the best for re-vaccination?—About 14 or 15, the age of puberty.

3754. Why?—Because experience shows that up to that time primary vaccination generally, or in the majority of cases, protects against small-pox.

3755. Does experience show that more persons are attacked by small-pox at the age of 14 than at the age of 10?—That is a point upon which I could not speak. Upon this point I am speaking from the general current opinion of the profession.

3756. I suppose that you would admit that it would be absurd to recommend 14 as the best period for re-vaccination if more persons, or as many persons were attacked at 10 as at 14?—Certainly.

3757. You said something in your examination expressing disapprobation of the practice of taking people to small-pox hospitals at the present time, did you not?—Yes, I consider it most objectionable.

3758. What have you to say about that?—The aggregation of a number of small-pox patients in any building, no matter how well ventilated, inevitably increases the mortality of the inmates, as it does in the case of every other disease of the same class. The way to treat small-pox patients is not to aggregate them, but to segregate them. I would rather treat 100 cases of small-pox in bell tents on Hampstead Heath, and I would have less deaths from the 100 so treated than they would get from 20 cases in the Small-pox Hospital at the present time.

3759. Then you think that, in fact, the mortality would be very much less if we had no small-pox hospitals?—I am quite sure of it as regards the mortality of the patients attacked.

3760. Then you would have to take some other measures; what measures would you adopt?—I should try and remove the patients from their homes, so as, if possible, to prevent the diffusion of the disease amongst the neighbours.

3761. On the other hand you have, I dare say, heard it stated, over and over again, that the nurses in those hospitals escape in a remarkable way?—I have.

3762. Would not that seem to be rather in contradiction of your view that the hospitals are places where greater mortality is produced?—No; because the nurses are all vaccinated and re-vaccinated, and I apprehend therefore that they are protected from the small-pox; but when the patients with small-pox are admitted, and they come into a hospital already full of small-pox patients, then their chances of death are very greatly increased.

3763. Then what plan would you suggest instead of these hospitals?—I would just run up a number of wooden huts on some open space, or, if the emergency were very pressing, I would put them in bell tents; I have done so before in similar cases, not of small-pox, but of other diseases of the same classes, and with the happiest results; the mortality diminished at once.

3764. Mr. *Taylor*.] You yourself are in favour of the system of vaccination, as more or less prophylactic against small-pox, are you not?—I am.

3765. You believe that it diminishes the chance of taking the disease?—Yes, I do.

3766. And that it diminishes the mortality in those

those who do take the disease?—Yes, up to a certain age, I think it has that effect.

3767. You found, however, that the popular feeling of Trinidad was altogether on the other side, and you had to pay people in order to induce them to be vaccinated?—I had.

3768. They took an entirely different view from that which you take?—Yes. As I said before, a good deal of it was sheer indolence.

3769. But besides that, you found the general opinion of the medical profession altogether adverse to vaccination, did you not?—No, not to vaccination with good lymph, but to vaccination with lymph derived from creole children, in which case there might be the contamination of leprosy.

3770. And you found a great indisposition on the part of magistrates to convict for disobedience to the compulsory law, did you not?—Yes.

3771. Was that from a dislike to compulsory vaccination, or from an opinion adverse to vaccination as a system?—I had no means of knowing what their opinion was as to vaccination as a system.

3772. The indisposition of the people to vaccination seems, however, to have gone further, because they concealed themselves and hid themselves so as not to be inspected by the medical officer?—They hid themselves rather, I think, because they were afraid of being summoned for not obeying the law. We only sent to hunt them up when the six months limited by the ordinance had expired, and then, of course, they knew that they were liable, because it had all been well circulated before by means of placards and hand-bills. They knew they were liable to a fine, and their fright and fear of being punished had something to do with their hiding.

3773. There was no small-pox epidemic in Trinidad during your official residence there, was there?—No.

3774. Was there small-pox at all?—No, not at all.

3775. Had there been no small-pox since the last epidemic to which you referred, of 14 or 15 years ago?—None whatever, I think.

3776. The population, therefore, for 14 or 15 years had had no experience of small-pox, and no cause to fear small-pox at all?—There had been alarms of small-pox two or three times, but it turned out on investigation to be chicken-pox.

3777. There was no condition of things upon which the population would have been warned that vaccination had been dangerously neglected?—No.

3778. You stated broadly, did you not, that either vaccination was a protective against small-pox, or it was not, and that you thought, therefore, that there was no need of compulsion, because those who were not protected by vaccination would be the only ones liable to danger in case the disease broke out?—Yes.

3779. You have already stated that you do not believe in the absolute protection of vaccination?—I do not.

3780. It is quite conceivable, is it not, therefore, that every case of small-pox being a possible centre of the disease, not only may the children of those who do not protect their children suffer from small-pox, but they may become centres of contagion to the society in which they live?—They do.

3781. It is not correct, therefore, is it, to say that it is a protective, or that it is not a protective, and that those who are not protected are

the only ones who suffer in case of an outbreak of the disease?—But my argument is that you are not in the right to force people to have their children vaccinated, unless vaccination is an absolute protection. If it is not an absolute protection, you are forcing vaccination, which is attended with certain evils of its own upon the parents, and at the same time you are not offering them an absolute protection against the small-pox. You are saying, "You must run the risk of your child catching syphilis, or some other skin disease," and at the same time it is not an absolute protection against the small-pox.

3782. Then it is not altogether a question of principle in your mind, but it is also a question of degree, is it not?—The protection is a protection of degree.

3783. If the protection were absolute, and if the danger of taking other diseases were nil, you would then maintain the right of the State to compel vaccination, I presume?—No; I should not even then, because I do not believe that the general mortality of the country is at all diminished by the absence of small-pox. In Trinidad, for instance, our mortality is none the less, because we have neither small-pox nor scarlet fever, nor hooping-cough, nor measles, which are the four most prolific sources of death among young children; yet our mortality among young children is double in Port of Spain what it is in London; so that by merely cutting off one disease from the category of diseases, you do not lessen the mortality of the country.

3784. The character of the disease of small-pox is very bad, is it not?—Very bad. Confluent small-pox is about as bad a disease as you can have.

3785. Would you not be glad to diminish the number of deaths by this disease?—I would, if it could be done by vaccination enforced by argument and by reasoning, but not by law.

3786. Mr. Holt.] Are we to understand that the remark which you have made with respect to the necessity of having healthy children as the subjects for vaccination extends to England as well as to Trinidad?—Certainly.

3787. You do not think that the danger of taking disease is confined to the taking of leprosy?—Certainly not.

3788. Then I presume that there might frequently be cases in which, so far as the observation of the medical practitioner went, the child was healthy, and still it might be in a condition to communicate disease to another child who was vaccinated from it?—I believe cases have occurred in which a child apparently healthy has been the means of communicating disease to another child. For instance, I might cite that very case of a child whose relation was a leper; it is quite possible that that child itself would have escaped leprosy; but it is equally possible, and rather more probable, that it was at that time a leper, the disease as yet being undeveloped. There were no appearances on the skin, but yet I might have communicated leprosy by that lymph.

3789. And the same thing might occur with reference to other diseases, I presume?—The same thing might occur with reference to other diseases, I think.

3790. Then in the case of large vaccine stations where a great number of children are vaccinated, there would be special danger, would there not?—Yes; I think that the danger is very much augmented there.

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3791. And inasmuch as the persons who frequent those stations are of the poorer classes, the poorer classes are especially exposed to that particular kind of danger, are they not?—Precisely so.

3792. Sir *Smith Child*.] You think that in those large establishments there cannot be any special knowledge of the children from whom the vaccine matter is taken?—There can be no such special knowledge.

3793. And you think that where the parents of the children had a knowledge of the child from whom the vaccine matter was taken, they would have less objection to vaccination being performed upon their own children?—I am quite certain of it; a large experience tells me that.

3794. Do you think that a more frequent inspection, and smaller centres, would tend very much to lessen those difficulties which at present result from the largeness of the stations, and the lesser frequency of inspection?—I do.

3795. You have been asked with regard to deaths from vaccination; I understood you to say that you did not know of any such cases yourself?—None have come within my personal knowledge.

3796. Were those deaths from cow-pox as a disease itself specially, or were they from induced disease?—I do not think that the cow-pox itself ever kills anybody, but the operation of vaccination kills in rare cases; the wound kills, or rather the consequences of the wound kill.

3797. You think that cow-pox itself could not kill, but that death, if it resulted, would ensue either from an induced disease, or from irritation set up in the system by the operation?—Quite so.

3798. But the wound might be caused in any other way; it might be the scratch of a pin, for instance?—Yes, the scratch of a pin might do it; but in this case the pin is charged with foreign matter introduced into the blood; the scratch of a pin would cause a very temporary irritation, which could by hardly any possibility, except in the most diseased subject, give rise to any fatal results; but with vaccination you have a much larger inflammation than would be caused by the mere puncture. The vaccine vesicle causes, in its normal and perfectly healthy state, an inflammatory areola, which is characteristic of the disease. That inflammatory areola, of course, in an unhealthy subject may become the origin of erysipelas, or of a sloughing ulceration.

3799. There have been cases of death from the scratch of a pin, have there not?—I believe that such cases do occur, but I never heard of such a case in an infant.

3800. It is a matter of notoriety that the late King of Bavaria, for instance, died from the scratch of a pin?—It is quite possible that the scratch of a pin might set up erysipelas, or gangrene, or pyæmia, or something of that kind.

3801. You spoke of the desirability of not sending patients to these large small-pox hospitals; but you advocate the isolation of the patients for two reasons, I understand; for the sake of the patients, as well as for the sake of the public?—Yes; for both reasons.

3802. I suppose a sort of malaria is created by the number of patients who are suffering from one disease?—Yes, undoubtedly, using the word "malaria" in its etymological sense, and not in its strict technical medical sense.

3803. And that malaria, you think, would ag-

gravate the case of a person suffering from small-pox?—Unquestionably.

3804. Mr. *Muntz*.] You have spoken of the existence of leprosy in the West Indies; what do you consider to be the cause of leprosy?—I consider that there are three main causes: the disease may arise spontaneously from bad diet and bad air; it may be hereditary, or it may arise from contagion or inoculation.

3805. Is spontaneous leprosy caused by a bad state of the blood, and dirt, and various other conditions?—Yes.

3806. Is leprosy known in England?—Extremely rare cases, which have not been imported, are known. I know of one case, but I believe the disease in that case was taken by contagion, because the only possible way of accounting for it is from the patient having nursed a child from the East Indies, who was covered with sores, and therefore I infer that it is almost extinct in England now. The disease itself used to be known in England.

3807. You stated, did you not, that in the colonies which were formerly slave colonies, the disease has increased?—I believe it has.

3808. Can you assign any reason for that increase?—It may have increased partly from vaccination, and partly from the lesser care that is taken to isolate the people, and from the persons connected by blood with leprosy patients marrying. For instance, you may have the apparently healthy child of a leprosy parent bearing children or procreating children, and the disease may skip over that generation, as it does sometimes with gout, and it may appear in the grandchild.

3809. Would not that be the case before the slaves were emancipated just as it is now?—I believe in those days there was a great deal more horror of the disease, and a great deal more care was taken. The owners of the estates, for their own sakes, kept the leprosy slaves apart from the others.

3810. You mentioned just now that you objected to vaccination being gratuitous, but you have stated that if you had children yourself you would have them vaccinated, and if you would have your children vaccinated, why should not the poor have their children vaccinated?—I would let everybody who fell within the designation of a pauper, and who could not afford to pay for their children being vaccinated, have them vaccinated. I said expressly that it should be a matter of poor-law medical relief, and with regard to those who are not exactly in the rank of paupers, but who usually receive gratuitous medical relief, there would be the ordinary benevolent societies and hospitals by which persons in that station might obtain vaccination. I have no objection to its being a matter of charity in the same way as other forms of medical treatment are, but I object to its being gratuitously and compulsorily performed by the Government.

3811. Do you consider the present lymph inferior to the lymph used in former times?—I do. I think the lymph has deteriorated.

3812. From what cause?—Probably from being carried through so many series of human bodies; but I know of three cases in succession, one, vaccinated 70 years ago, another, nearly forty years ago, another, a few months ago, which happened in my own family, and there is a gradual deterioration of the scar in all of them. I know, as a fact, that my own child had a splendid arm, to use the ordinary expression, with fine vesicles, and all that sort of thing,

thing, and yet the scars are nothing like what they are on my arm, and my scars are not so good as my father's were, who was vaccinated in the year 1800 or 1801. I have seen the scars on my father's arm many times, and my own are very much better than any I can get now-a-days.

3813. Do you consider that cow-pox from the cow has deteriorated, or merely that the fact of the lymph being taken from arm to arm has caused deterioration?—The fact of the lymph being taken from arm to arm has caused deterioration; I have no reason whatever to suppose that the lymph taken from a cow is less protective.

3814. Then if it were now taken from the cow, it would have the same effect as it had formerly, would it not?—I should apprehend so; I should think that there could not have been such an egregious mistake as must have been made by Jenner, and those who immediately succeeded him, in thinking that cow-pox was a certain protective against small-pox, if they had had the same experience of it as we have had at the

present day, when it certainly is not an absolute protection unless it be renewed.

3815. Nor is small-pox itself a protection against small-pox, is it?—But it is very much more so than vaccination.

3816. What evidence have you of vaccination having been properly performed except from the scars?—What other evidence can you have? That is usually accepted as satisfactory evidence.

3817. Would not the scars from other inoculations have the same appearance?—Yes; but practically nobody is inoculated in the arm except with cow-pox.

3818. Are not many people inoculated with lymph, as to which you do not know whence it is got?—But that will not cause the characteristic vaccine scar.

3819. Would not lymph taken from a greasy horse have the same effect as regards the appearance of the scar?—I never tried the experiment, and I could not say, but it is said that that was the origin of cow-pox.

Mr. DANBY PALMER FRY, called in; and Examined.

3820. *Chairman.*] You are connected with the Legal Department of the Poor Law Board, are you not?—I am; I have been (under Mr. Lumley), the head of the legal department of the Poor Law Board, for many years.

3821. You have had considerable experience with regard to the practice of the Poor Law Board in reference to vaccination arrangements, have you not?—Yes, it has come under my notice as part of my duty.

3822. Can you state to the Committee the practice of the Poor Law Board with regard to vaccination arrangements under the Act of 1867?—I should state in the first place, that the Act of 1867 left the existing arrangements, the arrangements which had been made under the previous Act of 1853, untouched; and that those arrangements as to the districts and appointment of vaccinators and stations, and so forth, remain unaltered until a vacancy arises by the resignation, or death or otherwise, of some vaccinator in the union.

3823. Is it the custom in each union to divide the union into districts for vaccination purposes?—Yes; if a vacancy occurs in the office of vaccinator in the union, it then becomes a question whether the existing arrangements in that union are in conformity with the regulations of the Privy Council; if they are in conformity with the Privy Council regulations (which is rather an unlikely case), then there is simply a re-appointment or an appointment of a vaccinator in place of the old one; but if they are not in conformity with the Privy Council regulations, then the Poor Law Board require the guardians to re-consider and re-arrange them.

3824. Then, to a certain extent, the Poor Law Board are subordinate to the Privy Council?—To the extent that they carry out the regulations of the Privy Council; they are the intermediate authority, as it were, between the Privy Council and the guardians for the purpose of seeing that the regulations of the Privy Council are duly conformed to.

3825. Will you state to the Committee what the arrangements are with respect to the appoint-

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ment of public vaccinators?—In such a case as I have mentioned, where the office of vaccinator becomes vacant in the union, and it is necessary to re-consider the arrangements, the guardians submit a proposal to the Poor Law Board, and the Poor Law Board then examine that proposal; if they find that it is in conformity with the regulations of the Privy Council, and that there is no objection otherwise to it, they approve of it, and the contracts between the guardians and the vaccinator are then entered into in accordance with the proposals so approved; the form of these contracts is prescribed by an order of the Poor Law Board, which was issued in February 1868, after the passing of the Vaccination Act of 1867.

3826. Do the guardians decide upon all the fees which are to be paid for vaccination?—They do so in accordance with the express provisions of the Act; in the Act of 1867, there is a section which prescribes a certain minimum fee in certain cases, but it is only a minimum; the words are "The rate of payment for primary vaccinations shall be not less than the following": The guardians make the proposal, and if the Poor Law Board see no objection to the rates which are suggested, they approve of them, and the contracts are then entered into in conformity with that proposal, and the contracts themselves when they are executed are submitted to the Board for their final approval.

3827. In what cases has any reference to be made to the Privy Council in respect to the approval of the contract?—If the proposal which the guardians make is not in conformity with the regulations of the Privy Council in any respect, the Poor Law Board then communicate with the Privy Council if they think there is a sufficient case for doing so; in the first instance, they communicate with the guardians and examine the proposal very carefully; but if the guardians adhere to their desire, the Poor Law Board then communicate with the Privy Council, and it then rests with the Privy Council to decide whether or not any deviation from that regulation shall be permitted in the particular case.

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3828. Is it not the case that during the last one or two years considerable changes have been made with respect to the size of the areas of the vaccination districts?—That results from the regulations of the Privy Council, especially with regard to town districts, which require that there shall be a population of 25,000.

3829. Will you state to the Committee first what the law was under the Act of 1853 with regard to the penalties on parents for not having their children vaccinated?—The Act of 1853 was the first Act which made vaccination compulsory, and in that Act it was provided that the parent or the person having the custody of the child, after receiving notice from the registrar, was bound to have the child vaccinated, and if he failed to do so, he was liable to a penalty not exceeding 20 s. He was also liable to a similar penalty if he failed to take the child for inspection after vaccination; and perhaps I should state that it was held by the Court of Queen's Bench with reference to that provision, in the case of *Pilcher v. Stafford*, which is the leading case on the subject, that a parent could not be convicted under that enactment a second time for neglecting to have his child vaccinated.

3830. Was it owing to the decision in that case that the law was amended, and the Act of 1867 introduced?—In the Act of 1867 there are two provisions on the subject, namely, section 29 and section 31. Section 29 substantially re-enacts the provision in the Act of 1853, but with the addition of these important words: "And shall not render a reasonable excuse for his neglect." In the Act of 1853 there was no restriction as to reasonable excuse, but in the Act of 1867 that restriction was introduced, otherwise section 29 is substantially a re-enactment of the provisions of the Act of 1853. The question as to imposing a second penalty under section 29 has not, so far as I am aware, come before the superior courts; but if it did come before them, I have no doubt that they would apply the principle of the decision in *Pilcher v. Stafford*.

3831. Clause 29 is very much the same as the clause in the Act of 1853, is it not, with the exception of that restriction?—Yes; so that there is no doubt that the decision of *Pilcher v. Stafford* may be considered as concluding the construction of section 29 of the present Act.

3832. Have you any information with respect to any difficulties which occurred in the working of the Act of 1853, as regards the penalty?—In consequence of the decision in *Pilcher v. Stafford* it was found that the Act could not be practically enforced, that a single penalty was not sufficient, and consequently the provision contained in section 31 of the Act of 1867 was introduced, that provision being quite distinct from the penalty in section 29.

3833. Will you state what that clause attempts to effect?—It may be distinguished in this way; section 29 is a penal clause, and section 31 is a remedial clause, the object being to get the vaccination of the child effected.

3834. Will you state the effect of clause 31?—It is set in motion either by any registrar of births and deaths, or by any vaccination officer appointed by the guardians of the union, and he is required to give information in writing to a justice of the peace if he has reason to believe that any child under the age of 14 years, being within the union or parish, has not been successfully vaccinated. The child must be within the union, and the informant must give notice to

the parent or person having custody of the child to procure its being vaccinated, and he must show that this notice has been disregarded. On receiving this information, the justice is to summon the parent to appear with the child before him at a certain time and place, and upon the appearance (these words should be especially noticed), "if the justice shall find after such examination as he shall deem necessary that the child has not been vaccinated, nor has already had the small-pox, he may, if he see fit, make an order under his hand and seal directing such child to be vaccinated within a certain time."

3835. Have any difficulties arisen with respect to this clause?—The chief difficulty which has arisen on this clause relates to the production of the child before the justice; but there are, in fact, two phrases which refer to that: first, that the child must be within the union; and secondly, that he must be summoned to appear with the parent. It is clear that the child may be sent away from the union, and such cases have occurred, and the question has arisen whether the justice in such a case has any jurisdiction to proceed, the child not being at the time within the union, although it may have been within the union at the time when the summons was issued. The parent may send the child away. That point has not yet been decided. It occurred in a case in which the guardians took proceedings, and it was agreed to submit the question to the Court of Queen's Bench, but the guardians have not followed it up, and do not propose to do so in consequence of the expense of the proceedings.

3836. Has another difficulty arisen also on account of the parent not having produced the child when summoned to do so by the justices?—The child may be within the union, and the parent may refuse to produce it, although he himself attends before the justice. In a case in which this occurred, the question arose, what was to be done. The Poor Law Board were consulted, and they laid a case before the law officers of the Crown, who advised upon it, that in their opinion the justice, under the terms of this clause, might proceed with the case, and dispose of it in the absence of the child; that the appearance of the child before the justice was not necessary either to give him jurisdiction or to enable him to determine the case. That opinion, I believe, has not been universally acquiesced in by justices and clerks of justices; and in another case which came under our notice it was proposed to indict the parent at the quarter sessions for contempt of justice.

3837. Has that been done in any case?—It has not yet been done in any case, so far as I know; and it is said that it can only be done at the instance of the Home Secretary.

3838. Do you know whether a case occurred at Wolverhampton very much of the character which you have named, in which the parent refused to bring the child into court?—Yes, that is one of the cases of which I now speak. We informed the guardians of the opinion of the law officers of the Crown, but the magistrate had dismissed the case before our communication was received.

3839. How do you know in the other case that they propose to indict the parent?—The guardians have submitted a request to the Poor Law Board, that the Home Secretary should be solicited to institute an indictment, and the Poor Law Board have communicated with the Home Secretary upon the subject.

3840. Do you know whether the magistrates have

have given any decision in that case?—They dismissed the case. I have not the papers with me, and therefore I cannot exactly specify the facts.

3841. Do you know what the name of the parent in the Wolverhampton case was?—I think it was Atkins.

3842. Is not the case from Wolverhampton to be submitted to the Court of Queen's Bench?—I believe that a "case" has been granted for that purpose.

3843. I suppose it would not be necessary for them to ask the permission of the Poor Law Board to its being submitted to the Court of Queen's Bench?—No; that would not be necessary.

3844. Have you any suggestion to make with respect to any amendment of this clause?—I should state first, that there is one case which has come before the Court of Queen's Bench upon this clause; the case of *Allen v. Worthy*, and in that case two points were decided; first, that a certificate as to the child's unfitness for vaccination was not a bar to proceedings under section 31; and secondly, that proceedings might be renewed under that section, and taken again and again as often as might be necessary until vaccination was effected; in this latter respect this section differs from section 29, under which no doubt the penalty could only be inflicted once; it appears to me to be desirable to amend section 31, by providing distinctly that the justice may investigate the case, and, if satisfied, make the order whether the child is before him or not; and also whether the child is actually within the union or not, provided that the parent is within the jurisdiction of the justice. If the clause were repealed, and re-enacted in terms which would make those two points distinct, it seems to me that then its object would be sufficiently accomplished.

3845. Have you anything else that you wish to say upon that clause?—Perhaps I might say that, to meet the case of conscientious objections, it might, perhaps, be worthy of consideration whether a man might not be exempted from the penalty who takes an oath or makes an affirmation that he has a conscientious objection to the vaccination of his child. It seems to me that this would be similar in principle to the statutes which prohibited the Ecclesiastical Courts from issuing execution against the person of a Quaker, though they might do so against his goods, and which was placed on the express ground that the people called Quakers were known to entertain conscientious objections to the payment of tithes and church rates.

3846. Do you mean that with regard to clause 31, or with regard to both clauses 29 and 31?—It would be applicable in principle, of course, to clause 29 as well; it arises more especially under section 31, because that is a remedial clause.

3847. Did you see the Bill introduced last year by the Honourable Member for Sunderland?—I did.

3848. Did you note the amendment which he proposed?—He proposed, as I understand, that there should be no more than two proceedings; that proceedings should only be taken twice under section 31.

3849. Have you anything to say with reference to that proposal?—It seems to me that that proposal would not meet the case of conscientious objections at all, for a man who conscientiously objects would be exposed to double proceedings,

and it would be ineffectual, or might be ineffectual, as regards other cases.

3850. *Mr. Candlish.*] How could it be ineffectual?—If it did not accomplish the vaccination of the child on the second occasion, no further proceedings would be possible.

3851. *Chairman.*] I suppose you know that even under the present law, by sections 29 and 31, though a number of convictions have taken place, yet the children in most cases still remain unvaccinated?—Yes; I should think so, from what I have seen of the proceedings.

3852. Do you know anything about the case at Bridgwater, where an indictment has taken place against a father for not producing his child at the petty sessions?—I do not think an indictment has actually taken place.

3853. Perhaps you are not aware that at the Bridgwater quarter sessions true bills have been returned against Roberts and another for misdemeanour for not producing their children at the petty sessions?—I think it has been stated to us, in a letter from Bridgwater, that that is so, but I do not know the result.

3854. Will you state what are the proceedings which are now taken by the registrar after the birth of a child?—When the registrar has registered the birth of a child, he is required to give notice to the parent, informing the parent of the provisions of the Vaccination Act, and his duty to get the child vaccinated.

3855. That is within seven days afterwards?—Within seven days afterwards, and he has to keep a book in which he shall enter minutes of the notices for vaccination given by him, and also a register of certificates transmitted to him.

3856. So that the first act which takes place after the birth of a child is to register it with the registrar, and then the registrar sends a notice to the parent, or gives a notice to the parent, when he registers the birth of the child to have it vaccinated within a certain time?—Quite so.

3857. Supposing that the parent does not produce to the registrar a certificate of vaccination, what takes place?—The registrar is then required to lay before the guardians half yearly a list of the cases in which he has not received the certificate of successful vaccination; he has to do that within one week after the first day of January and the first day of July in each year. The certificates of successful vaccination are to be sent to the registrar, and he is to enter them in the book in which he has entered the notices, which he has given, and the residue of the cases where he has received no such certificate, he has to lay before the guardians half-yearly.

3858. Is there not considerable objection to this mode of making reports merely once in each half year of the number of cases that remain unvaccinated?—Yes, it is a very long interval; it does not bring the matter before the guardians so frequently as perhaps might be advisable.

3859. Have you any suggestion to make as to the amendment of the law in regard to those proceedings?—Looking at all the provisions of the Act upon that subject, and the practical effect of its working so far as it has come under my notice, it has appeared to me that the object would be much more effectually attained if all proceedings instituted for default under the Act should be taken by the guardians and not by the registrar of births and deaths.

3860. You mean that you would have the notice sent to the guardians in every instance?—The registrar should still continue to give the notices

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notices to the parents on the birth of the child, and to keep a register of such notices, as he is now required to do. Instead of furnishing the guardians with a half-yearly list as he is required to do by section 27, I should propose that the registrar should be directed to send to the guardians from time to time, either quarterly or monthly, or at such period as might be found best, a duplicate of his own register, the register of the notices that he has given. The guardians would then have before them the list of the births in the union, and the parents to whom notices have been given; I should then propose that all the certificates, or at all events the certificates of successful vaccination, should be sent to the guardians instead of the registrar, and the registrar would then have no further duty to perform with regard to vaccination beyond giving and registering the notices.

3861. You propose that the guardians should take proceedings against the parents of children not vaccinated instead of the registrar?—Instead of the registrar. At present, under the Act it is directed that either the registrar or the guardians, that is, the officer of the guardians, should proceed.

3862. You suggest that in every union the guardians should appoint some person to be vaccination officer?—Precisely so; my proposal involves that this should be compulsory on them.

3863. He might be either one of their officers or a new officer, as might be necessary?—As might be necessary. It might be the clerk or one of the existing officers to whom the additional duty might be given, or it might be a person appointed for the purpose under the regulations of the Poor Law Board.

3864. With respect to the certificates which are forwarded by medical practitioners, that is to say, those who are not public vaccinators, to whom must they send their certificates?—The public vaccinator would be required to send the certificates of successful vaccination to the guardians instead of the registrar; and the certificates given by other medical practitioners would be in the same position. At present the private medical practitioner is not required to send a certificate to anybody; he is required to fill it up and sign it, and the parent is required to send it to the registrar. Instead of sending it to the registrar, it would only be necessary that the parent should be required to send it to the guardians.

3865. Then does your proposal amount to this: that you think that the registrar should send a quarterly or monthly report of the births to the guardians?—Of the births, and of the notices he has given, and that would be all that he would have to do; all the rest being done by the guardians.

3866. Have you any other suggestions to make upon that part of the Act?—I suppose that if that were carried out, it would be further necessary to reconsider the remuneration of the registrar, which according to the present Act consists of 1 *d.* per case for giving the notice to the parent, and 3 *d.* for registering the certificate of successful vaccination.

3867. He would continue to receive his 1 *d.* for giving notice, because he would continue to give the notice?—Yes; it might be a question whether that should not be slightly increased, if the 3 *d.* for the certificate is taken away. There would be another advantage in it, though it would be a slight one. There is no proof that the registrar gives the notice to the parent, except

his own statement. If a vaccination officer were appointed by the guardians, whose duty it was to look up all those cases, he would find out whether the notice had been given or not; it would be a check.

3868. Has your attention been given to the state of the law with regard to the registration of births, which in England is not compulsory, while in Scotland it is compulsory?—In a general way my attention has been directed to it, and there is ground, I suppose, for believing that a considerable proportion of the births are not registered. There is no definite information on which, so far as I know, a satisfactory conclusion could be arrived at, as to the extent to which the births escape registration, but I believe it has been very much under the consideration of the Registrar General for some two or three years past, and no doubt some one from that office (Dr. Farr, for instance) will be much better able to give the Committee information upon that point.

3869. Has your attention been at all drawn to the law with respect to the penalties for conveying infected persons in public carriages?—It has on some occasions come before the Poor Law Board.

3870. Do you know whether there is any penalty for conveying infected persons in railway carriages?—There is a penalty in the Sanitary Act against getting into a public conveyance whilst suffering from small-pox, but that penalty is upon the individual.

3871. Is there any penalty upon a railway company, as carriers, for carrying an infected person?—How far it would apply to railway companies, I think very doubtful indeed.

3872. The words are “any owner or driver of a public conveyance;” would that be considered applicable to railway carriages?—The words of section 25 of the 29 & 30 Vict., chapter 90, which is the Sanitary Act of 1866, are these: “If any person suffering from any dangerous infectious disorder, shall enter any public conveyance without previously notifying to the owner or driver thereof that he is so suffering, he shall, on conviction thereof before any justice, be liable to a penalty not exceeding 5 *l.*” I have not got section 30 here, and I cannot say from memory what its precise terms are, but this clause merely refers to the person himself. The other day a case came before me of a corpse having been conveyed by a railway company to a parish in the country, the corpse being that of a person who had died from small-pox. The corpse was buried in the village churchyard, and the small-pox broke out in the village very shortly afterwards, and the people connected the outbreak of small-pox with the conveyance of this corpse for burial in the churchyard. It was a question how far that could be brought within the Act. It certainly was very clear that a corpse was not a person entering a vehicle, and I suppose it is a matter of question whether a corpse can convey infection. That, of course, is a medical point upon which I can express no opinion.

3873. Have you any other suggestions to make as to the way in which the law could be amended?—There are one or two perhaps minor points, but which are of some importance in the construction of the Act, which I think perhaps it would be advisable to amend.

3874. Will you be good enough to state them?—Section 33, I think, should be amended in this way: that section provides that what is known as Jervis's Act, 11 & 12 Vict. chapter 43, should be

be applicable to proceedings under the Vaccination Act, except section 11, and the effect of that exception is to remove the limitation of six months, within which complaints before the justices must be made under Jervis's Act, so that proceedings under the Vaccination Act may be taken at any time beyond six months; but that fails as regards the metropolis, because it was apparently overlooked in drawing this clause, that it does not apply to the metropolis, which is governed in this respect by the Police Act 2 & 3 Vict. c. 71, s. 44.

3875. So that you have one state of the law in the country, and another state in the metropolis?—Yes; in the metropolitan police district the proceedings must be taken within six months; in the rest of the country they can be taken at any time, and I should therefore propose that that section be amended so that the proceedings with regard to the limitation of time should be excepted from the 2 & 3 Vict. c. 71, s. 44, with reference to the metropolitan police district, as well as from the other Act. It is a technical matter, but perhaps it is advisable to do it when the Act is being altered.

3876. Have you any other suggestion to make for the amendment of the Act?—Yes; I should propose that the two other certificates, the certificate of unfitness and the certificate of insusceptibility, certificates B. and C. under the Vaccination Act, should both be sent to the guardians, as well as the certificate of successful vaccination.

3877. So that they would be able to register them up as they do the certificates of successful vaccination?—Yes; so that they shall have the history of the case in all its intermediate stages up to successful vaccination. The guardians may be unaware of the history of the case, and they may therefore be taking proceedings against a parent who produces a certificate in court and completely upsets them; if they were furnished with the several certificates from time to time, they would be able to see whether proceedings ought to be taken or not.

3878. I understand that according to the present law, it is not necessary to send those certificates to the guardians, and that they often take proceedings against parents, and when the parents appear in court, they produce certificates B. and C.?—Yes; I have known some such cases. The guardians are required to make inquiries under section 27, but there is very great difficulty in making those inquiries. The Act says, "The guardians shall forthwith make inquiry into the circumstances of the cases contained in the list, and if they find that the provisions of the Act have been neglected, shall cause proceedings to be taken against the persons in default." There is a great difficulty in carrying out those inquiries.

3879. Have you any other suggestion to make to the Committee for the amendment of the Act?—I should propose that the form of certificate B., the certificate of unfitness, should be amended. That certificate runs at present thus, "I, the undersigned, hereby certify, that I am of opinion that [], the child of [], of [], in the parish or township of [], in the county or borough of [], aged [], is not now in a fit and proper state to be successfully vaccinated; I do hereby postpone the vaccination."

3880. What do you propose in the place of that?—It seems to me that the form suggested

in Mr. Candlish's Bill of last year cannot be improved.

3881. What is the effect of that?—"I the undersigned hereby certify that I have this day examined" (that is one material addition) "the child of so and so, and am of opinion that the said child is in the following state of health [here state the particulars of the condition of the child], and is therefore not in a fit and proper state to be vaccinated, and I do hereby postpone the vaccination of the said child." It states the ground of the opinion as well as the opinion, and it states the material fact that the medical man examined the child on that day. My attention was called to that matter when I issued a small edition of the Act, and I referred to it at the time, and suggested an alteration upon that point.

3882. Sir *Smith Child*.] In that case the facts would be fresh in the recollection of the medical man?—Yes; it was found that those certificates were given, as the Committee are probably aware, by medical men who were opposed to vaccination without having seen the child at all; and there was nothing to show that they had examined the child or had any ground for their opinion beyond their objection to vaccination.

3883. With regard to your suggestion of allowing the declaration of conscientious objection to be given, you would do that, I presume, by a form to be added to the new Act?—Yes. Perhaps the Committee would allow me to submit, in a written form, a more complete statement of the amendments which I propose in the Act.

3884. *Chairman*.] Will you hand in all your suggestions of amendments in a written form?—Yes, if the Committee will permit me to do so, because it is almost impossible to give in an oral explanation the precise details of amendments of this character, many of which are quite technical.

3885. Is there any other point upon which you would suggest amendments?—Section 23 is the one which requires the parent to lay before the private medical practitioner a certificate of the successful vaccination, which he has to fill up and sign, and then the parent has to send it to the registrar. It seems to me that that section might be improved by requiring the private medical practitioner to deliver the certificate to the parent without being asked for it, thus imposing the obligation rather upon the medical man than upon the parent. Suggestions have been made for the amendment of this clause in other respects. It has been pointed out, for instance, that the medical man is not required to deliver a certificate after he has signed it, and it is also pointed out that the parent may be unable to read, and therefore may not know what certificate he has to lay before the medical man.

3886. What amendments have you to suggest on this clause?—I think that if the medical man were required to deliver a certificate of successful vaccination to the parent in every case, placing the obligation upon him to do so, that would meet all that is required.

3887. With respect to the amount of fees generally agreed to be given by the various boards of guardians, are they kept down to a minimum sum, or do the guardians deal in a liberal way with the public vaccinators as to the amount of remuneration?—That has not come so directly under my personal notice as the working of the law in other respects, so that I am hardly in a position to give a general opinion upon that point.

3888. In case we made a grant of one-half the

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the vaccination fees from the Government, would it lead to more liberal terms being made with medical practitioners, and would a better system of vaccination be thus carried out?—Yes; I should think it would have that effect, because the guardians no doubt would be more liberal; for instance, if it were compulsory upon the guardians to appoint a vaccination officer, and the Government were to pay any portion of the expenses, either the salary of the officer or the expenses which he has incurred in the prosecution of the proceedings, that would be one way of meeting the point.

3889. Can you speak with respect to the Irish Vaccination Act?—I have looked at it, but of course I have no practical knowledge of its working; it does not come before our office at all.

3890. Do you know whether under that Act there are one or more penalties?—The terms of the enactment in that Act upon the subject of the penalty appear to me to be very similar to those in the English Vaccination Act of 1853, and therefore the principle of the decision of *Pileher v. Stafford* would, if the question were to arise in Ireland, be applicable.

3891. You cannot say from your own knowledge, whether vaccination is carried out very satisfactorily in Ireland?—I cannot.

3892. Sir *Smith Child*.] I did not quite understand what you suggested as to the difficulty in clause 31 with regard to the appearance of the child, and what alteration you proposed; will you state what your suggestion is?—I proposed that the clause should be redrawn so as to enable the justice to proceed with the case and to decide upon it, and make the order for vaccination, in the absence of the child.

3893. Under the clause as it now appears, it says that the parent must appear with the child, and there is no penalty for the parent not producing the child, is there?—That is the state of the case; but the law officers advised that notwithstanding that, if the parent appeared without the child the justice might proceed with the case, take such evidence as was available, and make an order for the vaccination of the child, if he was satisfied that the facts required it.

3894. It does not appear to me to be a question of construction, because the Act says specially, "The justice may summon such parent or person to appear with the child"?—I think if you will read further you will observe that it is not quite so, because it says, "and, upon the appearance, if the justice shall find."

3895. Mr. *Jacob Bright*.] Has a justice ever given orders for the vaccination of a child in such a case?—I believe that has been done since that opinion, but I cannot say positively. The law officers considered that the words "upon the appearance" meant any appearance that would satisfy the summons; that it was not open to the parent to say "I have obeyed the summons," and at the same time to say, "I have not obeyed the summons."

3896. Here a parent may be summoned and not choose to come, and there is no penalty for the parent not coming, is there?—Then he would be dealt with under *Jervis's Act*, in the usual way; but he does attend, and he says, "I have appeared to the summons." Then the law officers say, "If you have appeared, the justice may proceed; the case is either complete, or it is not complete."

3897. Then in case the justices give an order that the child is to be vaccinated, will you tell

me how they proceed to get at that child?—They cannot themselves get the child vaccinated. The order is that the parent shall get it done, and then if he does not get it done he is liable to a penalty.

3898. Sir *Smith Child*.] Do you hold that there should be a conviction, even though there should be a certificate of unfitness produced?—I do not hold it, but the Court of Queen's Bench does. In the case of *Allen v. Worthy*, one of the defences set up was that the parent produced a certificate of unfitness; but the Court said that that was no bar to the proceedings under section 31, though it would be a bar to the penalty under section 29, because the justice is to satisfy himself, and the justice might be satisfied, notwithstanding the certificate, that the child was in a fit state to be vaccinated, and ought to be vaccinated.

3899. Then the justice would set at nought the opinion of a medical man, and upon his own notions convict, although there might be a special certificate from a medical man to say that the child was not fit to be vaccinated?—Quite so; that is the decision of the Court of Queen's Bench.

3900. I suppose you consider that the certificate of unfitness ought to bar conviction?—I think that the Court of Queen's Bench were quite right as the clause stands in the Act. If the certificate were drawn in such a form as has been suggested, then it would be a different thing.

3901. But I am supposing that the certificate is altered according to the proposition which you have just now made, that the doctor shall state that he has "this day examined" the child, then stating the grounds of unfitness. Upon the production of a certificate drawn in such a way, you would consider that that should be a bar to conviction, I presume?—No doubt.

3902. Mr. *Holt*.] Will you state to the Committee the reasons which induce you to think it desirable that proceedings in these cases should be taken out of the hands of the registrar, and that another officer should be appointed by the guardians to conduct them?—In the present state of the law, the guardians do not necessarily know what the registrar is doing, and the registrar does not necessarily know what the guardians are doing; I do not know that such a case has ever happened, but it is possible that they might be both going into court against the same man at the same time.

3903. But would it not be sufficient that the registrar should receive instructions from the guardians?—In some cases I know the guardians have appointed the registrar as their vaccination officer, and so have got over the difficulty.

3904. Would not that meet the case?—No doubt that does meet the case as far as it goes, but I am not aware that that has been extensively adopted, and the question did arise as to the legality of it, because the Act treats the registrar and the vaccination officer as two separate persons.

3905. If the law were changed, would it not be better to make such an arrangement as you now suggest, instead of appointing a separate officer?—I do not know that the registrar is a very good person for carrying out the Vaccination Act. If the vaccination officer is required, as in large towns, to make house to house visitations, it does not follow that the registrar would be

be a person very well suited for that employment.

3906. If the law were amended, as you suggest, would it not considerably increase the expense of carrying out the Act?—I am not prepared to say that it would. I think that the 3*d.* paid to the registrar amounts in the aggregate to a very large sum, but that is a guess; I have not had any means of forming an opinion, except that I believe that the payments to some registrars are very considerable.

3907. Mr. Taylor.] I understand that your suggestion for altering the law as to clause 31, would be to give the magistrate power to make an order without seeing the child or without its being in the union, supposing the father was there?—Yes.

3908. And that in case of non-compliance there might be repeated fines, and so on?—Yes.

3909. But I understand you to suggest an exception in favour of the conscientious objectors; I presume that mere apathy and idleness you would not term conscientious objections?—Certainly not.

3910. Nor an ignorant dislike to having vaccination performed?—No. The proposal that I made was that a man should take an oath or make an affirmation, and he must judge for himself whether he entertains a conscientious objection.

3911. But I do not understand what you mean by a conscientious objection; do you mean by conscientious objection a religious idea which would make a man avoid doing something which otherwise he would think expedient and wise?—I should understand a conscientious objection to be a conviction on the part of a parent that he was doing an injury to his child by allowing it to be vaccinated.

3912. Then, if a parent thought that there was a certain risk in being vaccinated, and not a proportionate advantage as regards the protection against small-pox, would you consider that a conscientious objection?—He must take his own oath upon that, and must decide for himself.

3913. Would you propose to allow a person, because he took an oath that he did not wish to do a thing, to call it a conscientious objection, and to avoid the Act under that term?—I think that he must do that. I do not see how you can do otherwise. Each man must be left to form his own judgment.

3914. In the case of a Quaker, which you gave as an illustration, there is a religious objection to do a particular thing, not an objection to give his evidence, for instance, but an objection to give it under a particular form; that is so, is it not?—Their objection was to paying tithes or church-rates.

3915. Or to taking an oath?—The Acts to which I referred were particular Acts which exonerated Quakers from liability to personal imprisonment on refusing to pay tithes and church-rates.

3916. Your proposition then would be that a person who had an objection to vaccination, because he did not think it worth while, or for any other reason, should be allowed to escape compulsion by merely stating that upon oath?—What I said was, not that he might escape compulsion because he thought it not worth while, but that the man might be exempted from the penalty who takes an oath, or makes an affirmation that he objects conscientiously to the vaccination of his child.

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3917. Would not his declining to have his child vaccinated be *ipso facto* evidence that he thought it better not to have it done?—No, I cannot think that that would be the same thing as putting a man upon his oath.

3918. Mr. Jacob Bright.] Will you tell me what is your office under the Poor Law Board?—I am the head of the legal department of the Poor Law Board.

3919. Then, does the question of vaccination come very much before you?—Yes, as to the construction of the law; not of course the practical working of it in detail, but the general working of it.

3920. Is this opinion of yours that the law should be made less stringent, that is to say, that persons on making a declaration should be absolved from having their children vaccinated, your personal view or the view of your department?—I hope it will be understood by the Committee that all I have said with regard to suggested amendments is entirely my own personal view; that it is not the suggestion of the department at all.

3921. But you have special means of information upon this question; you have reflected much upon it, and you think deliberately that where a person makes a declaration that he objects to have his child vaccinated, he ought to be free to take his own course?—I think the question has two sides to it, undoubtedly. There is the interest of the community to be considered, and the interest of the child to be considered, as well as the interest of the parent; but it seemed to me that if conscientious objections could be entertained at all in such a case, they might be met in the manner which I have suggested; and I think it might be a proper point for consideration whether the question does not stand upon very much the same footing as the objection of Quakers to pay tithes and church-rates, for that was what was dealt with by the statutes to which I have referred.

3922. Are you aware that the medical department of the Privy Council, so far as it is represented by Mr. Simon, has stated that 97½ per cent. of the people are vaccinated?—I was not aware of that.

3923. Are you aware that he has also stated that we are in the midst of the greatest small-pox epidemic that we have had since the period of registration?—I have heard that stated.

3924. If those things were both true, you would consider, would you not, that it was scarcely right to put men into prison and treat them like felons, to put on them the prison dress and to crop their hair, because they do not believe in this peculiar doctrine?—Yes, I think it would be fair to consider their tender consciences. I must say it is a very great interference with the right of the parent for the State to compel the parent to deal with his child in any particular way whether by education, vaccination, or otherwise, and it is so very serious an interference that it appears to me that it ought to be strictly guarded and limited, wherever it can be so without detriment to the State.

3925. If men could free themselves from this necessity of vaccinating their children by making that declaration, is it not your opinion in the face of the fact that we are in the midst of the greatest epidemic we have had for generations with nearly all the people vaccinated, that gradually a very great number of persons would make that declaration really believing the whole thing

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thing to be humbug?—I do not know that there are so many people who entertain this conscientious objection; I very much doubt whether it is entertained to any very great extent.

3926. Of course I am assuming those things to be facts which Mr. Simon has stated. If they are facts, do you not think that it is likely that the majority of persons would soon make the statement that they have conscientious objections?—No, as a matter of opinion, I do not think that there is any likelihood of it.

3927. Sir *Dominic Corrigan*.] Would not every objection which a parent might make in this case, except for the promise of reward or the fear of punishment, be a conscientious objection, and might not every parent thus escape the action of the law?—I do not suppose that every parent wishes to escape the action of the law. The great majority of people, I apprehend, are quite ready to have their children vaccinated. A great many of them neglect it, because they do not choose to take the trouble; but the number of people who entertain really conscientious objections is probably comparatively small.

3928. Would not that mode of escape open such an immense loophole for the non-enforcement of the law, that the law might become almost nugatory?—There is no question that it would open a loophole for the non-enforcement of the law to a certain extent, but I do not think that it is at all likely to have the effect of rendering the law nugatory, because the only persons at all likely to take advantage of it would be those who do not choose to take the trouble of having their children vaccinated. Persons who wished to have their children vaccinated would of course not take advantage of it.

3929. Then you think it would not be objectionable to permit such an exemption?—I think it might be done without any serious risk of upsetting the law; at the same time, that is merely an opinion.

3930. Mr. *Candlish*.] If the parents at large took that course, the assumption would be that the public at large would be against the law, would it not?—Yes.

3931. And if the public at large were against the law, the law should be altered?—The law should be altered in that case.

3932. And it would be altered, whether the penalty was there or not?—I do not think that the parents at large are opposed to the law; but if they were that would be the result.

3933. The public at large will rule the law?—No doubt.

3934. What would be a conscientious objection would be what was in the mind of the parent for the time being?—Certainly.

3935. You would not define a conscientious objection by law, I presume?—No; a man must decide for himself. The great difficulty that I see in the proposal is this, that it would be impossible to prove perjury, because if a man takes an oath that he has a conscientious objection nobody can ever prove that he has not.

3936. You see no further objection to it than that?—No, I do not think the loophole to fraud is of much serious practical account; but the other difficulty is a serious one, because it is taking an oath to a matter of opinion.

3937. You have stated that medical men have given certificates of unfitness without seeing the child; do you know any such cases?—The cases have come before me at the Poor Law Board; I do not know them otherwise.

3938. In the case quoted, *Allen v. Worthy*, the certificate was from Dr. Collins, was it not?—Yes.

3939. Are you aware that he had seen the child when he gave that certificate?—I believe in that particular case he did.

3940. So that the case was fairly brought before the court?—The case was fairly brought before the court.

3941. And a certificate is not a bar to proceedings, is it?—No; I know through the medium of the correspondence of the office a great many cases in which Dr. Collins gave certificates without seeing the children; I have reason to believe so from the statements which were made, but I do not know it otherwise.

3942. You believe that a medical certificate of unfitness ought to prevail against a conviction if attained in the way you point out?—Yes; if it is a proper certificate, and properly obtained.

3943. What is proper you would not leave to the discretion of the magistrate?—No; such a certificate as I have suggested ought, I think, to be binding upon the magistrate, because the medical man is a much better judge than the magistrate on such a point.

3944. You say that the private medical man should give the certificate to the parent, and that the obligation should be upon him?—Yes.

3945. And if he did not do so you would impose a penalty?—There is no penalty provided by the present Act.

3946. If you make it a duty imposed by the law, the law must follow up its enactments by a penalty, must it not?—Yes, it ought to be so.

3947. Then, if you impose a penalty you would have to give pay, would you not?—I do not think that that follows; if a parent goes to a private medical man he must pay the expenses himself if he does not choose to go to the public vaccinator.

3948. I suppose, in point of fact, the law is not now compulsory, and the law does not now secure universal vaccination?—It does not secure universal vaccination.

3949. Then it is not compulsory, is it?—I do not quite see the distinction; the law is compulsory in its intention.

3950. Have we any powers under the law to compel anybody to vaccinate his child?—No.

3951. Then the law is not compulsory?—It is not effectual.

3952. Do you know any way in which it could be made effectually compulsory?—It might easily be done by enabling a magistrate to order a medical man to go and vaccinate the child, which section 31 does not do.

3953. How do you conceive that that would be carried out?—It would only be done by main force.

3954. Do you not regard that as impossible?—Practically it is so.

3955. Then we cannot enforce compulsory vaccination, can we?—It seems to me to be the only way in which it could be done, and practically, that would not be tolerated.

3956. You know something about the Bridge-water Case, do you not?—Yes.

3957. Do you not think that proceedings, by way of indictment in that case, are very severe pending this inquiry?—They are not only severe but they are very circuitous, very cumbersome and very costly.

3958. Has the Poor Law Board any legal power

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power to intervene to prevent the action of a local authority in the matter of vaccination?—No.

3959. Would it be very much beyond the competency of your department to suggest to those magistrates that the law might be kept in abeyance pending this inquiry?—That is a matter of administration, which I think, perhaps, I should be hardly justified in answering. That is not a question of law; it is a question of policy. As a matter of fact, we have been in communication with the Bridgewater Guardians about the case.

3960. Mr. W. H. Smith.] Are you aware what steps the Poor Law Board have taken to give effect to the Act of 1867?—They communicate with the guardians of the different unions.

3961. Have they really sought to put any pressure upon guardians to make the inquiry required in section 27 of the Act, and to appoint or pay any officers to prosecute persons charged with offences against the Act?—No; they have no power to do so; under section 28, the appointment rests entirely in the discretion of the guardians, and the Poor Law Board have no control over it.

3962. The Poor Law Board, I think, have the power of objecting to the amounts that the guardians may wish to pay to the officers so appointed?—Not to the vaccination officers under this Act, except in the metropolis, where it is levied from the common poor fund. No amount can be repaid from that fund for vaccination expenses which has not previously received the sanction of the Poor Law Board; but that provision does not apply to the rest of the country.

3963. In point of fact, no effectual effort has been made on the part of the Poor Law Board to put this Act in force; is that so?—Generally speaking, such an effort has been made; the Board issued a circular, very shortly after the passing of the Act, and of course in every case which comes before them, they see that the regulations of the Privy Council are carried out.

3964. But section 27 says distinctly, that the registrar shall send a certain list of cases every six months to the guardians, and the guardians shall forthwith make inquiry into the circumstances of the case; has your department informed itself of the fact whether or no guardians have really made inquiry into the circumstances of the case, and proceeded against parties who have been in default?—No, I think not.

3965. Are you aware whether you have objected to any application on the part of the metropolitan authorities asking for powers to appoint officers to inspect?—I believe there has been such an objection, but that does not come under my personal knowledge, and I could not give you any information that could be relied upon. A great deal of correspondence takes place in which legal questions arise which I have cognisance of, but a point of this kind would not necessarily come before me.

3966. You have spoken of the difficulties in the way of guardians making inquiries; what would those difficulties be?—For instance, in some unions I know that the guardians have sent a letter in each case upon receiving the half-yearly list, and having sent a letter to each person whose name appears in that list, they get no answers. Then they send a letter perhaps appointing a certain day on which the parents may

attend and give their explanation. On that day nobody comes, and they find great difficulty in getting any explanation from the people at all.

3967. Is it the fact that those two sections 27 and 28 have really not been carried out?—I suspect they have not to any very great extent, or, at all events, not fully. I dare say the registrar lays the half-yearly list before the guardians, and that thereupon in a great many unions the clerk writes to the parents, but there it stops. In some unions they get an explanation, no doubt, but in others they do not. In London they employ vaccination officers, who go round from house to house and see the parents.

3968. But that has been only very recently the case,—under the pressure of the panic arising out of this epidemic?—Yes, no doubt.

3969. Is it not the case that the Act having been passed in 1867 has only been applied in a very limited degree in 1871?—I think that is very probable.

3970. The medical officers of health are appointed by vestries and district boards, are they not?—Yes.

3971. Medical officers are appointed under the Poor Law, whose salaries are paid one-half by the guardians out of the rates, and one-half out of the Imperial Exchequer; the Consolidated Fund?—Yes.

3972. Then you have public vaccinators paid wholly out of the rates, who are appointed by the Privy Council and the Poor Law Board jointly, have you not?—The Poor Law Board approve of the vaccinators and see that they are properly qualified, but they are appointed and paid by the guardians.

3973. This is the result then, is it not, that you have three persons distinctly with medical duties, whose work is carried on independently of each other, whose districts are not the same, who recognise different authorities, and who are paid out of different funds, all being medical officers?—Yes, that is quite true.

3974. No one of them being in any degree compelled to assist or to supplement the work of the others?—Yes; that is quite true.

3975. Is that a satisfactory condition of arrangements in your judgment; does it conduce to the public advantage?—Perhaps it is not so bad as it looks; as regards vaccination there was a reason for it; vaccination is entirely disconnected from the relief of the poor, and there is an express provision in the Vaccination Act that it shall not be regarded as relief, and all the way through it has been a great object to dissociate it in the minds of the poor from poor law relief. That might be a very good reason for dealing with the vaccinators as distinct from the medical officers of the union.

3976. You now propose to associate in some degree, the registration of vaccination with the administration of the poor law, do you not?—Yes.

3977. So that any objection which might be entertained, as to the mixing up of two things, has disappeared from your mind?—I was not describing my own objection, but the motive of the law; perhaps it is a little fanciful.

3978. Do you not think that much of the difficulty which exists as regards the enforcement of this Act would be done away with if the Government paid some portion, say one-half, of the expense attendant upon vaccination, as they pay half the salaries of poor law medical officers?

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officers?—Yes; there is no reason in principle why they should not pay the whole, but there may be an advantage in leaving a portion of it to be paid by the guardians who have actually to administer the Act.

3979. If we were reconsidering the health arrangements of London, you would see some advantage probably in endeavouring to place those three medical officers in some relation to each other, or to amalgamate their duties in some way?—Yes, I should think it highly advantageous.

3980. Mr. Cave.] You mentioned the plan of allowing persons to state that they had a conscientious objection to vaccination; is not there a danger of opening the door to various infractions of the law in that way?—Yes, I admit that.

3981. It is unprecedented, is it not?—It is not unprecedented, because the case of the Quakers affords an example.

3982. But is that an example in point; was that conscientious objection admitted?—Yes, it was admitted by the Legislature clearly.

3983. Was it admitted in regard to the payment of tithes?—Yes, it was put upon that ground.

3984. But was not something paid in lieu of them?—It was only that the Quaker was exempted from the liability to be sent to prison; his goods might be taken; he was not exempted from the payment of the tithe, and, as is well known, the common practice of Quakers was to leave the money on the table.

3985. That is rather tantamount to the substitution for an oath to an affirmation in a court of

law; it is not taking away the absolute duty, but it is allowing them to do it in a different way, is it not?—Undoubtedly the analogy fails to that extent; the payment was obtained from the Quaker, although he was exonerated from personal liability.

3986. I quite admit the advantage of doing something of this sort if you could do it; but might you not open the door in the same way to objections against education?—I think religious objections in the matter of education are allowed by the Legislature; for instance, in the poor law system, a child cannot be instructed in a form of religion contrary to that of which his parent approves.

3987. But he must be instructed in some way or other according to the new Act?—Yes; but still tender consciences are regarded as respects the religious objection.

3988. In the case of the Peeuliar People for instance, who think it wrong to call in any medical assistance, might they not put in a plea of the same kind?—I should think they would do so to a certainty; it would follow necessarily from their peculiar principles.

3989. It is a hardship minor in quantity but very much the same in principle, is it not?—Yes; but I fancy the Peeuliar People are not very numerous,—at least in that sense.

3990. Would there not be difficulty in admitting a precedent of that sort, though from some points of view it might be desirable?—It is liable to that line of reasoning; still, it has occurred to me that there might be a way of meeting the difficulty to a certain extent, and that if it could be done it might be advisable to do it.

Friday, 28th April 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.

Sir Dominic Corrigan.
Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, Esq., IN THE CHAIR.

Sir DOMINIC JOHN CORRIGAN, Bart., M.D., a Member of the Committee; Examined.

3991. *Chairman.*] As a Physician long resident in Ireland, have you had considerable experience with respect to vaccination in that country?—I have had some experience of vaccination; I would not reckon my personal experience as on a very extensive scale, but I have been connected with very large hospitals for many years, which are commonly known as the State hospitals, containing 400 or 500 beds, in which we receive patients suffering from all sorts of infectious diseases, including small-pox, measles, and scarlatina, so that incidentally I have come very much in contact with vaccination; I have also, for the Poor Law Commissioners, inspected workhouses with regard to the diseases of children; I was sent by the Government to inspect the Royal Hibernian School at another time, so that my whole professional life has made me more or less acquainted with diseases, including small-pox on a considerable scale.

3992. Do you wish to make any statement with respect to vaccination?—If it were not out of order, I would wish to say a few words before undergoing examination. I think the great question before us is whether vaccine poison can contain within itself syphilitic poison or any other poison. For the present, I would confine myself to what is the great terror, viz., syphilitic poison. Now it is a rule admitted everywhere, *eadem est ratio de non apparentibus et non existentibus*. Those who assert that vaccine virus can contain syphilitic powers, cannot prove by demonstration that it does; neither can I prove by demonstration by the microscope, by chemical tests, or by any other means, that it does not; therefore so far as regards physical demonstration, the two sides are exactly on a level. We cannot distinguish snake poison from white of egg. If vaccination produced an acute disease of any consequence, we should expect it, or at least I should expect it, to appear as a particular and specific disease; just as measles produce measles, and the disease is known by its signs; just as small-pox produces small-pox, which is well known by its marks; just as scarlatina produces scarlatina, which is known by its characters; just as mumps produces mumps, known too by very peculiar characters. I will not trouble the Committee further with illustrations, but in all

those cases we have a specific disease, which shows distinctly and positively the origin from which it arose, and which is distinguished by its characters from all other diseases. We have no such disease in the same view as vaccine disease; we have no such thing as a disease distinguished by peculiar characters of which we can say that that is vaccination disease just as we say that is small-pox disease. This leads me to a very important point; first, that vaccination does not produce a specific disease in the same way as other diseases do; like does not produce like as to the effects upon constitutions or as to the danger of death. The next point is as regards death. If vaccination produced death (and I do not believe that it ever did *per se*), we should expect it to produce death by the production of a certain disease to which we would give the name of the vaccination disease as we give the name of small-pox disease to that peculiar disease. I never saw such a disease, and I never heard from any one that there was such a disease. I therefore do not believe that vaccination *per se* ever produced death. There is another point I think which bears very strongly against the supposition of the vaccine virus conveying syphilitic poison, and it is this: if a person be contaminated by syphilis, by the infection of chancre, or by the other form of it to which we give the name of gonorrhœa, the disease generally appears upon the part to which the poison was applied. In the cases in which the matter from chancre or from venereal sores (and they are numerous) has been taken, and has been inoculated into the skin, the chancre appears on that particular spot. This is not only well known among the public, unfortunately too often, but in the profession it is well known. If a physician or surgeon who is attending a woman in her confinement has a scratch upon his finger, and gets from her syphilis, he gets a sore upon that finger. If he applies that finger through carelessness, as has unfortunately sometimes happened, to another woman in attending her, discharge or sore is produced upon her, and it is traceable; and it is upon the point upon which the poison has been applied that it breaks out. Now, I never knew of any case in which on vaccination the insertion of the fluid of vaccination produced a chancre upon the spot where it was applied; and

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I never heard from anyone that he had seen such an instance. If we look to analogy, we do not find other diseases charged with conveying different diseases from themselves. The prostitutes who frequent our large towns labour, I know, very often under contagious diseases, such as eczema, which is a disease of the skin, and is contagious; impetigo, one of the varieties of scald head, which is a particularly contagious disease; and porrigo, or what is commonly called scald head. I never heard of any of those diseases being conveyed along with syphilis or gonorrhœa from the woman to the man; and if it be asserted that vaccine does convey with itself, and can contain within itself, another poison totally different from itself, then I can only say that according to my experience it is in direct contradiction to all the analogies which we have from all other instances of the conveyance of disease. The occasion of the inspection, ordered by the Government, of the Royal Hibernian School near Dublin, was this: the boys wore woollen caps, and I found them suffering to an immense amount, and in an immense proportion, from a variety of scald head. It was one variety, which spread through them all. Those boys inoculated one another from wearing the same woollen caps; that is to say, that when they went out to play, they changed their caps in play. The cap of the boy who was suffering from scald-head went on the head of a boy who was not suffering from it, and the result was the extension of the disease. I need not trouble the Committee with the measures which we took; but those children were all the children of soldiers from different parts of the world. It was not my duty to investigate whether they had syphilis or not, and they might have had it without its being apparent, for they were of all ages, from four or five years of age up to twelve, when they were sent out to the army, or sent out to pursue trades; but I never heard such a suspicion entertained as that this disease in passing from one to another conveyed also syphilis. It never entered into the mind of any one, nor did a single instance ever occur which gave rise to such a suspicion. If impetigo does not or cannot convey syphilis, I do not see how vaccine can do it. In the case of the workhouses, I was also engaged by Government some years ago to make an investigation into the infant mortality. It was a few years after the introduction of the poor laws, and the children were dying off; unfortunate creatures, some with purulent ophthalmia, and a good many with secondary syphilis; but in the cases in which purulent ophthalmia spread from one child to another, I never, either from the medical officers or from any others, heard the suspicion that the purulent ophthalmia or the impetigo ever conveyed syphilis from one child to another. I would therefore say that I see no proof that the vaccine virus ever does contain syphilitic poison, and that all analogy is against it. The only other point on which I would presume to trespass on the time of the Committee for a moment is this: that I have heard that one of the arguments is, that sometimes after the inoculation with vaccine, syphilis or some other disease has appeared; in fact, numberless diseases are said to have followed. All I can say of this is, that all the diseases which are mentioned are diseases which are common to childhood, and which occur under all other circumstances, and that no specific disease has ever been discovered to belong to vaccination. Therefore, with regard to what are called the results of vaccination, I

look upon them in relation to vaccination simply as events which follow vaccination in point of time; but not as results. All the diseases which have occurred, and which are attributed to vaccination, are diseases which occur in childhood, where there has never been vaccination. I have never heard small-pox charged or accused with conveying syphilis, and I do not see how or why vaccine should do it or can do it.

3993. But supposing that after vaccination syphilis appears in a child whose parents have not been known to be tainted with the disease; how do you account for such a case as that?—I should require positive proof, that neither father nor mother had ever had syphilis; and in such cases I could not believe assertions, or sometimes even the person's oath. The motive to concealment is so great, that it overweighs everything else; and therefore the mere fact that I did not know them to have had syphilis, would be no proof whatever that either one or the other had not had it; there is not a year in our lives in which persons will not come to us, and tell us positively in the most plausible manner, that they never went in the way of getting syphilis; but I could trust them. I was anxious to obtain as much information as I could upon the subject; and there are a number of gentlemen in Dublin, who combine the two qualifications of having been a great many years in practice, and of having had very extensive experience in vaccination, and whose position in the profession as accoucheurs has brought them peculiarly into contact with it; and to those gentlemen I addressed a series of queries upon the subject of vaccination.

3994. Will you state the names of the gentlemen to whom you sent the queries?—I addressed the list of queries to five gentlemen, whom I selected as being among the most distinguished in the profession in Dublin, and also as having been a great many years in practice, and as having a very extensive knowledge of vaccination. Those gentlemen were Dr. Churchill, Dr. Beatty, Dr. Dwyer, Dr. McClinton, and Dr. Evory Kennedy. Dr. Churchill was for many years professor of midwifery in the School of Physic, and is now president of the College of Physicians; Dr. Beatty was also president of the College of Physicians, and is one of our first authorities in everything connected with female diseases; Dr. Dwyer has been secretary to the Cow-pox Institution for many years, and this has naturally led him into considerable occupation as a vaccinator; Dr. McClinton was master of the Lying-in Hospital, which is one of the first positions in Ireland; and Dr. Evory Kennedy was also master of the Lying-in Hospitals, and holding the first position; in fact those five gentlemen hold the very highest positions. In putting the questions to them, I particularly desired that they should not mix up any public reports, or public institutions, but that they should confine themselves simply to the results of their own experience. The queries which I put to them all were as follows: "How many years have you been in the habit of vaccinating? What is the probable number vaccinated each year, or in total? Have any, and if so what, bad consequences followed attributable to vaccination? Have any, or many, cases of small-pox occurred among those whom you vaccinated? Would you have probably heard of cases of small-pox so occurring? If such have occurred to your knowledge, have any of the cases terminated fatally? Insert name, title, and public appointments."

appointments." With the permission of the Committee, I will hand in the replies sent by those five gentlemen.—(*The same was delivered in, see Appendix.*)

3995. You are personally acquainted with those five gentlemen, and you received those papers from them in reply to your queries?—I have been personally acquainted for many years with every one of them, and I received personally from them those papers.

3996. Can you state to the Committee anything with respect to the mode in which vaccination is carried out in Ireland?—It is carried out by public vaccination establishments at which the dispensary officers attend, I think two days in the week. It is also carried out by the Dublin Vaccine Institution, the Cow-pock Institution, as it is commonly called, which has three or four stations in different parts of the city; and the attendance is on alternate days at those stations.

3997. Is the vaccination done gratis?—It is done gratis.

3998. Can you state whether a large majority of the people in Ireland are vaccinated?—I think so, but I cannot give you the numbers. The Poor Law Commissioners' Report will give that.

3999. It is the fact, is it not, that there have been very few cases of small-pox in Ireland, or certainly very few fatal cases during the last few years?—Very few indeed. About the year 1862, before the Vaccination Act came into operation, we had a very severe epidemic of small-pox at those hospitals to which I was attached. That was soon after the outbreak of cholera, but since that I do not think we have had any epidemic worth talking about.

4000. We heard in the evidence of some gentlemen who have appeared here that small-pox had broken out in Belfast and in one or two places in Ireland; do you know whether that is so?—I do not know it personally as a fact.

4001. Do you know whether it has increased there at all?—I think not, but however the weekly returns in the Poor Law Commissioners' Reports will state that. I think it does not prevail to any great extent. For instance, in the very large Dublin hospitals, Hardwicke, Whitworth, and Richmond, of which I am now consulting physician and governor, when I left Dublin we had not a single case of small-pox.

4002. Do you take it that the great freedom from small-pox and from deaths from that disease in Ireland is at all owing to the way in which vaccination has been carried out in that country?—I think the true state is, that vaccination has been carried out very well, and that the people are most favourably disposed towards it.

4003. You do not find that there is any agitation against vaccination, or any large number of people who object to vaccination being carried out?—No; the feeling of the whole country is in favour of it.

4004. I suppose you are aware that the Act under which vaccination is made compulsory in Ireland only imposes one penalty for non-vaccination?—I think I recollect that it is so; but I think it would have been equally as well carried out had there been no penalty at all.

4005. Do you think that the people are so willing to accept vaccination as a protection that even without a penalty the Act would have been carried out?—I think it would. Parents are very careful to guard their children.

4006. Is there any statement which you wish to make with respect to the mode of imposing penalties for non-vaccination?—I do not like penalties at any time, and in such a case as this I would rather appeal to their good sense, and if there were to be a penalty, I would have it inflicted only once, and have it very small, rather as a warning than anything else. I should like very much that in place of repeated penalties (which, when repeated, become persecution), there should be a very small penalty as a warning to the neighbourhood rather than as a punishment to the offender; but I would decidedly go so far as this: that if unvaccinated children afterwards presented themselves for admission to public schools, or public institutions, or for apprenticeships, or employments, I would declare them inadmissible to public schools, or to factories, and to the various public establishments in which young people are employed, unless they produced certificates of vaccination; and I would impose a penalty then for their being admitted without a certificate of vaccination, not on the poor children, or on their ignorant parents, but on the heads of factories, or schools, or establishments, who admitted them. The principle upon which I would, as it were, inflict that penalty, if it can be called so (but it would be rather a prohibition), would be simply this: that each child, not being vaccinated, might become a mine of disease, and thus injure others around it. I would go no further than that.

4007. You would do by an indirect pressure what it is now attempted to do by a direct penalty?—I think so; and if the Act were carried out by intelligent persons who could talk individually to the parents, and explain the good results of vaccination, and the reasons for not admitting the children to schools and establishments, I have no doubt that the ignorant English people would come round to the good sense which I must say is exhibited by the humbler classes in my own country.

4008. *Dr. Lyon Playfair.*] I hold in my hand a circular from the Poor Law Commission Office in Dublin of the 20th of September 1869. In that circular is the following passage: "It is encouraging, however, to observe that the present total cessation of the disease in Ireland has been gradually approached since the compulsory vaccination of children has been put in force under the Act of 1863, the annual mortality by small-pox having been for many years previously about 1,000 deaths, on the average representing, of course, a very much larger number of cases of attack and disfigurement. The course of decrease in the mortality has been as follows: In 1864 the number of deaths was 854; in 1865, 347; in 1866, 187; in 1867, 20; in 1868, 19; in the first quarter of 1869, 3; and in the second quarter, none." Does that, in your opinion, represent fairly the action of the Vaccination Act in Ireland?—I am sure it does. I never had any reason to doubt any assertion that the Poor Law Commissioners put forward; but I would wish to add a little qualification to it in this way, that if the constitution of the people is very much reduced in strength and in health, as it was after the frightful fevers of 1850 and 1851, when I was Commissioner of Health, and if then an epidemic disease happens it will more readily seize upon those broken-up constitutions than it will upon persons in strong health, so that I would say that the good result in Ireland is mainly attributable to the introduction of vaccination, but I think that there must come in, for the credit of a certain

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tain proportion of the immunity, the improved state of the health of the people.

4009. When was the famine in Ireland?—In 1848, 1849, and 1850, and it began to disappear in 1851.

4010. Are the numbers which I have read to you from 1864 upwards?—They are.

4011. The statistics which I have read to you would not have been affected by the famine in Ireland, would they, because the statistics which I have read to you commenced in 1864?—They could not if they commenced in 1864.

4012. Does the average of a thousand deaths in Ireland at all represent the epidemic years in Ireland, when the deaths used to be 6,000 or 7,000?—That depends upon what the statistics are.

4013. This is only an average of 1,000 deaths, representing non-epidemic years and epidemic years; but it is not the case that in epidemic years in Ireland the deaths have been from 6,000 to 7,000?—I cannot give you the number at present.

4014. The Chairman referred you to the case of an epidemic having recently broken out in Belfast. In the circular of the Poor Law Commission of the 7th February 1871, I find the following paragraph: "It will be seen from these lists of cases that the towns of the eastern coast of Ireland are frequently invaded by small-pox imported from Great Britain, more especially from Glasgow, Liverpool, and South Wales; they are suffering at the same time from their vicinity to Belfast, the only town in Ireland where a serious epidemic of small-pox has prevailed, the contagion communicated from thence to the neighbouring towns being limited at present to a few sporadic cases." In a previous circular the Poor Law Commissioners point out that vaccination is more neglected in Belfast than in any other part of Ireland. Is it your opinion that this epidemic which has recently occurred in Belfast, and which has only extended sporadically to other places, may be owing to importation from Great Britain, and to the fact of the neglect of vaccination in the town of Belfast?—It may be owing to that; but not having any personal knowledge of the circumstances in Belfast, I would rather not give an opinion one way or the other.

4015. But this opinion of the Poor Law Commission is probably as an official opinion entitled to confidence, is it not?—I should say that it is entitled to the greatest confidence. I certainly have very full reliance upon any statement coming from the Poor Law Commissioners in Ireland.

4016. Was it not the case that in Ireland there was a minor epidemic of small-pox about every three years, and a major epidemic every six or seven years, and is not the fact that no such epidemic has appeared since 1864, a strong reason to believe that the diminution is owing to the operation of the Vaccination Act?—In a very great measure in an immense proportion. While I was physician of seven hospitals, and attending them until 1864, I am not aware that a single year ever passed over in which I had not cases of small-pox in the hospitals, in fact they were of such ordinary occurrence that they did not create any surprise.

4017. Mr. Holt.] Are you personally acquainted with the vaccine stations in Ireland, so as to be able to express any opinion respecting the mode in which vaccination is carried on at

the public stations?—I never had any opportunity of seeing the vaccine stations throughout Ireland.

4018. You do not know whether there are a large number of children presented for vaccination daily, or anything of that sort?—No; the only vaccine institution which I ever personally visited was the Dublin Cow-pock Institution, and when I visited it there were great numbers of children there.

4019. You cannot speak as to the care exercised in vaccinating children by public vaccinators in Ireland?—I never heard any complaint of imperfect vaccination in Ireland.

4020. In a pamphlet which has been sent to me, the following passage occurs: "I went to a public station, where there were about 40 or 50 children who had been submitted to the process, and from whom I was politely invited to make my selection; but not seeing a single case which I approved, I went again the following week, when I was again kindly permitted to exercise my choice." The next sentence is this: "Out of a somewhat larger number of children, I was only able to select two who presented a tolerably truthful semblance of relation to the old or former disease, and one of these I subsequently rejected in consequence of my seeing a strumous scar on its sister's neck."

4021. Does your experience enable you to express an opinion as to whether the same difficulty would be found in Ireland in selecting healthy children at large public vaccine stations?—Such a statement might be made with respect to the vaccine stations in Ireland, and it might be true or it might be untrue; but I know nothing of the writer of that statement, and I give no opinion upon statements of the truth of which I know nothing.

4022. Do you know whether the lymph used in Ireland is generally provided locally, or derived from some central authority?—It is derived from various sources. The dispensary officers get it from children whom they themselves have vaccinated; they also get it from the National Vaccine Institution in London, and they also get it from the Dublin Cow-pock Institutions.

4023. Have you ever heard of any complaints as to the character of the lymph which is supplied from the larger institution?—No, never, and I think I should have heard of it if there had been any.

4024. With reference to a question asked you by the Honourable Member for the University of Edinburgh, are you aware that there is a statement made in the "Cork Constitution," of an alarming spread of small-pox having taken place at Durrus in the county of Cork?—I place very little reliance upon newspaper reports.

4025. Are you not aware that there is no alarming spread of small-pox there?—I am not aware of it; but, on the other hand, I would not say that it does not exist; I know nothing whatever about it.

4026. Dr. Brewer.] In relation to the exclusion of unvaccinated children from factories, are you of opinion that small-pox infection (called I think sometimes here malaria) may be so intensified by the number of cases attacked within a limited area, as to risk the immunity from disease, and risk also the life of those who would otherwise be safe?—There is not a doubt of it; and there is a very strong proof of it, which I may incidentally mention, of which we had unfortunately a great deal in the Crimea. In the case of

of a contagious disease such as hospital gangrene, if a number of cases be congregated (which is, I suppose, analogous to the case which you have stated), the disease will rapidly spread; but if those attacked by this disease are scattered to a large extent, or are put in separate wooden huts, it ceases to spread.

4027. Can infection be so intensified as to give great additional danger to those who are practically protected by vaccination?—Certainly.

4028. Have you ever seen a case of skin-disease such as *lepra*, or that class of chronic disease occasioned by vaccination?—No.

4029. Have you ever seen a case of syphilis which you could trace to transmission by vaccination?—Decidedly not.

4030. Have you ever seen any cases which would lead you to suspect that undeveloped constitutional disease was transmitted by the vaccine ichor through a child as a medium to a second child vaccinated from the arm of the former child?—No.

4031. Mr. *Candlish*.] You think that a direct penalty upon the parent for refusing to vaccinate should be only inflicted once, and should be small?—Precisely.

4032. But you would secure vaccination at a later time by indirect means, by excluding from schools and from workshops?—Yes.

4033. Would not the latter penalties be much more severe than, or as repulsive to you as the repeating penalties now imposed without limit under the English law?—I think not.

4034. Your procedure would either compel vaccination, or keep the child in perpetual ignorance, would it not?—Yes.

4035. And would shut it from the walks of industry?—Yes.

4036. Do you not think that that would be an exceedingly repulsive and severe penalty?—I think not; any more than requiring that a child should not be admitted into a public school with itch, that he should go there with his hands and face washed.

4037. But non-vaccination is not of itself a disease?—Certainly not.

4038. Then a child going into a school unvaccinated, or into a workshop unvaccinated, is not conveying disease?—No; but he will get it.

4039. Then there is not an analogy between a child with the itch and a child not vaccinated, is there?—Not exactly; I said that if there be certain rules on which children are admitted to public schools or factories, and if they are not admitted unless they comply with those rules, in either case there is a prohibition; I did not say that there was an analogy between itch and non-vaccination any more than there is an analogy between non-vaccination and a dirty face; but I simply say that if there are certain rules under which children may be congregated, I see no greater hardship in saying that a child should not be admitted without vaccination than I should see in requiring that it should have its face and hands washed, or its clothes clean.

4040. A rule governing either a school or a factory may be either good or bad, I presume?—Certainly.

4041. But because you would establish good rules, it may be a very small reason for establishing bad ones?—Certainly.

4042. Then it comes to this: is the penalty which you would inflict for non-vaccination a right or wrong thing in itself?—It would be a prohibition, or a penalty, if you like to call it so.

4043. Do you think that it would be a right thing to exclude a perfectly healthy child from a school because there was a possibility, putting it on your own ground, of its being some day affected by small-pox?—Decidedly.

4044. And the same in a manufactory?—The same.

4045. Then you would not allow an unvaccinated person to live?—I would not say that; there are other pursuits besides working in factories.

4046. Am I really straining the inference from your position; how is a poor person to live if he is not allowed to work?—He may work.

4047. That is what I want; but you would not allow him to work?—I beg your pardon; I said that I would not allow unvaccinated children to go into places where they would be congregated with other children, and where they would expose other children to great risks; I would let those children, if they were unvaccinated, occupy themselves in agricultural labour, or the thousand pursuits which are open to them, but I would not permit them to be congregated with other children.

4048. Where is the danger to the other children in the school or in the manufactory, assuming that all the other children in the school or manufactory to have been protected by vaccination?—Just the same danger as there is putting bags of gunpowder among other materials in a warehouse, that those may blow up and destroy other things about them in the warehouse. If there are unvaccinated children in the factory congregated with other children, then the poison of small-pox, which probably is always floating through the world, as soon as it finds a matrix, as we call it, in which its poison will grow, will seize upon that child which presents a favourable matrix, and thus we shall have the small-pox developed at once, and then if it be intensified it will injure perhaps many of those who have been vaccinated.

4049. A child at school smitten with small-pox would, so soon as the small-pox manifested itself, be removed from school, would it not?—You might as well remove a bag of gunpowder after you have put a match to it. If a child has small-pox, you cannot tell that removal will prevent others becoming infected.

4050. Will you tell me how you establish the analogy; one child, say, in a school of 500, is unvaccinated, and gets small-pox, and so soon as it is affected it is removed from the school; how is the explosion to take place among the remaining 499?—You say, first, that it is removed from the school; I say that, in an immense number of instances, it could not be removed from the school.

4051. Very few children, I presume, would attend school under such circumstances?—I have young relatives at this moment at boarding-schools, some in England and some in Ireland, and if one of those children gets small-pox, how is he to be removed, or where is he to be removed to? Is he to be removed in a railway carriage, or public carriage? Removal is often impossible. Then, again, removal, if it can be effected, would not be a safeguard, because before the eruption breaks out the poison exists, and has existed for a fortnight, in the child. When a child is removed in either measles or scarletina, or small-pox, from a school, its removal does not save the others, because we know that the period of what we call incubation, or that time during which the poison lies latent, is generally a space

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of 14 days, and within those 14 days every child in the school may be infected. Nothing is more common than that children who have been sent home from the school on the appearance of small-pox or scarlatina must be separated from their families at home for at least a period of 14 days; that is our general rule. Therefore, removing the child, even were it possible, would not remove the danger.

4052. Then, if this explosion be a probability, do you not, in so far as you make it out to be a probability, diminish your argument in favour of vaccination by its failing to protect from this ignition and explosion?—I have not said, and I do not think, that vaccination protects totally and completely, and in all cases, from small-pox. It is a preventive and a protection of such wonderful power that, even if it were proved to me that 10 vaccinated cases out of every 100 died, still, when I knew that from 50 to 60 of unvaccinated cases died, I would vaccinate precisely on the same principle, as, although in one case out of every five the operation for the stone proves fatal, still the operation would be performed, because it saves four lives out of five, and you run the risk of one dying.

4053. With submission, does not the analogy fail inasmuch as you pre-suppose the existence of the store, whereas in this case there is no pre-existent small-pox?—No.

4054. Then you think that the wit of man would be unequal to the removal of the child affected with small-pox from school, and that even if it were equal to it the removal would be worthless?—He cannot be removed in a railway carriage; he cannot be removed in a cab; he cannot very often be removed from a distance; and even if he were removed the knowledge comes too late.

4055. Would the same difficulty of removal apply to workshops?—I do not think that the same difficulty would arise with regard to workshops. The child previously to the appearance of the disease on it, that is to say, previously to its patent appearance, would not mix with the other children. I take it for granted that the child goes to the workshop and returns home at night.

4056. Did you ever know an epidemic commence among the vaccinated persons in a town or school?—That is a question which it is not easy to answer.

4057. Such an occurrence seems to be necessary, as a fact, to make out your principles?—I have not known such a case, but it does not follow that it might not happen.

4058. If in all your extensive experience and your yet more extended knowledge of the action of this disease and its history, you have not known a case occurring under the circumstances which you desiderate, is not the probability that it would not occur at all?—I have not known such a case.

4059. You hold, do you not, that vaccination will not convey syphilis or any other than the vaccine disease?—That is my opinion. I hold that it will not convey any poison whatever but itself, and in using the word "poison," I use it, of course, in the sense in which it may include the most healthy things as well as the most destructive.

4060. Would you limit that statement to this condition precedent: that the lymph must be pure?—I take it for granted that it is pure lymph. If lymph is lymph, it cannot be anything else.

4061. But if it be mixed with any foreign substance, such as blood, may there not be a conveyance of disease?—If I took the contents of the vaccine vesicle and mixed them with the contents of the syphilitic chancre, I do not know what would happen. I never did it, and I do not think there is any experience upon the subject.

4062. If the blood of the child from whom you take the lymph mixes with the lymph, would that convey a disease?—I do not know; that implies that it should be badly done.

4063. Did you hear Dr. Bakewell's evidence on the last meeting of the Committee?—I heard a good deal of his evidence.

4064. Did you hear him state that it was next to impossible to take the lymph from the vesicle without scraping off some of the surface which was not itself the lymph?—I do not recollect his saying that it was impossible.

4065. Did you hear him say that it was constantly done, and that an operator without a microscope could not be conscious that he had mixed the lymph in that way?—I did not hear him say that it was impossible, nor do I believe it, because the way in which the lymph is taken is this: that the vesicle under which the lymph is held, and which is a thin transparent membrane, is picked and the fluid comes out, and is taken on a glass or on an ivory point after it has flowed out.

4066. May not a portion of matter foreign to the lymph, such as blood, mix with it undetected?—Yes, it might, particularly if the operator were careless.

4067. Is not that a very common occurrence?—I think not, quite the contrary.

4068. Have you vaccinated much yourself?—Yes, I have, a good deal, and I would say that any man who taking the contents of a vaccine vesicle drew the thousandth part of a drop of blood, was a very bungling operator, and utterly unfit to be employed in the office.

4069. You do not know how many bunglers there are in the country?—Not in England.

4070. If pure lymph is easily obtained, and will convey nothing but the vaccination disease, it will be a matter of no consequence whatever, I apprehend, whether the child be itself healthy or diseased?—I think so; but at the same time as there can never be positive certainty in those cases, if I went into a vaccine institution, I would naturally select a healthy child; but I believe that the vaccine taken from an unhealthy child, if the vesicle were good, would be vaccine, and nothing but vaccine.

4071. Then what will you gain by selecting the healthy child?—I do not think that I should gain anything, except that I think that there is this principle involved; that you had better consult the feeling of others, and the popular idea about it, and your own doubts, if any exist.

4072. Then a child may be suffering from syphilis, and the lymph from its arm may be used without any other result than the satisfactory vaccination result?—Certainly; that is my opinion.

4073. And it is of no consequence of what disease the child suffers?—I think not. One animal poison exists by itself, and does not contain another. All analogy bears us out in that.

4074. You are aware, I presume, that doctors differ upon that as upon other points?—So do lawyers, and Members of the House of Commons, and

and divines; I know no difference between doctors and other professions in that respect.

4075. But, on this particular point, do you know that doctors differ?—It would be very odd if they did not when lawyers and judges differ.

4076. Do you know Mr. Hutchinson of the Metropolitan Free Hospital?—No.

4077. Did you hear him mentioned here the other day by Dr. Simon as a man of eminence?—I do not think I was present when Dr. Simon was examined.

4078. Do you know that Mr. Hutchinson has reported his belief that syphilis may be conveyed by vaccination, and that he says, “I believe that I have seen four or five instances in which local syphilitic affections were induced by vaccination performed under ordinary circumstances and by duly qualified men;” you do not concur in that?—No; but I think the answer is a very loose one, for he speaks of local affections.

4079. Do you know a Dr. Marnock, physician to the Suffolk General Hospital?—I know personally very few members of my profession in London.

4080. You do not know that he said, “I have seen many cases of syphilitic disease following vaccination”?—I have no doubt that syphilitic disease may have followed vaccination in succession of time; but that is quite a different thing from its resulting as a consequence from vaccination; however, I have nothing to do with other persons’ opinions.

4081. Were you at the meeting of the Royal Medical Society on Tuesday night last?—No.

4082. Are you a member of that society?—No; I think I was invited, but I did not go. I have unfortunately been at other discussions on vaccination.

4083. Are you aware that Mr. Hutchinson at that meeting, on Tuesday night, read a paper on a series of cases in which chancres had been caused by vaccination?—I should like to know where the chancres were; a chancre may be on a man’s toe, or on his nose.

4084. If a chancre comes to his toe or on his nose in consequence of vaccination, it will be a disease beyond the vaccination disease, will it not?—But I do not admit your premises; I really have nothing to do with Mr. Hutchinson’s opinion.

4085. Mr. Hutchinson gives evidence of the fact?—I should require, in order to be the judge of the evidence to have the facts before me.

4086. You dispute that disease can be conveyed at all by vaccination; did you hear Dr. Bakewell state that disease may be conveyed to the child from whom the lymph is taken, by the use of the same instrument on both children?—There is no doubt in the world that if a patient have syphilis, and I dip the lancet in that syphilitic matter, I can convey it to a child; but it does not follow that it is in the vaccine secretion. Of course I could convey any disease if I could get the matter.

4087. Dr. Brewer.] Are you aware that in Boston the dry vesicle, with its surface, has been used and mixed with a little glycerine, and that operations performed upon the patients subsequently have been successful?—I will not give any evidence of any fact, unless I am aware of it.

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4088. Mr. Muntz.] With regard to your suggestion as to unvaccinated children not being allowed to enter factories or schools, was that an original idea of your own, or have you heard that it was the plan adopted in foreign countries?—It is very hard to say that there is anything new under the sun. I am very much inclined to think that it arose in my own mind, but at the same time I think it but just to say that the same idea was given to me by the Honourable Member himself, and that he did not get the idea from me, nor did I get it from him; and I am very proud that his mind and mine generated the same idea. I think we came to it without any previous discussion whatever on the subject.

4089. You are not aware that it is the rule in some foreign countries?—I think now that you mention it that I heard that it was a rule in Prussia when I was there.

4090. Chairman.] I suppose that although you said that you were not aware of any epidemic having broken out amongst vaccinated persons in schools or workshops, it is the fact if a disease does break out in a school, it is very quickly disseminated?—There can be no doubt of it.

4091. Mr. Candlish.] But you have never known a case where it was disseminated from a school of generally vaccinated children?—I know an instance where attacks of small-pox proceeded from a school where some were vaccinated and some were not.

4092. Mr. Taylor.] Does the fact of small-pox, being the disease under which a child is labouring usually, become evident at about the same time in each case from the commencement of indisposition?—Yes, from the time that the fever sets in and the eruption appears, we have three stages. We have what is called the period of incubation, that is, when the child has imbibed the poison from the atmosphere or otherwise. Our general calculation from the observation of facts is, that the period of what we call incubation is about 14 days. Then there comes what we call the period of fever; and I think that the eruption generally appears about the third day, and then the disease goes on through its several stages, so that we have the period of incubation, the period of premonitory fever, and the period of eruption.

4093. At what time does the possibility of contagion arise?—It certainly arises during the period of incubation.

4094. You were asked whether syphilis could be communicated, as far as you know, through the vaccine matter, and you made an answer which I did not quite understand, “In the toe;” will you explain what you meant by that?—I simply observed in reply to the Honourable Member for Sunderland, when he asked whether chancres might not arise from vaccination, that a man might have a chancre on his toe or on his nose.

4095. If it were alleged that indurated chancres were found actually in the vaccine cicatrices, would that be in accordance with your observation or belief?—I do not see how anything of the kind is likely to come there.

4096. I presume through the vaccine matter?—But I will not admit it; if you give me the case from the beginning to the end, I will give you an opinion upon it; but if I supposed that I had found (I never heard of it, and therefore I

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neither admit or deny the fact) an indurated chancre in the neighbourhood of the cicatrix, or directly on it, I should require a great deal of evidence before I would admit that that arose from vaccination: I must have the whole facts, the times that elapsed, and in fact the whole

particulars of the case before I gave any opinion upon it.

4097. In fact, from its presence there, if you found it, you would not attribute it to vaccination?—I do not know to what I should attribute it; I never saw such a case.

Mr. JAMES FURNESS MARSON, F.R.C.S., called in; and Examined.

Mr. Marson,
F.R.C.S.

4098. *Chairman.*] ARE you a Fellow of the Royal College of Surgeons, and also the resident surgeon of the Small-pox Hospital at Highgate?—Yes.

4099. How long have you held that appointment?—For 35 years.

4100. Having held the appointment during that long time, you have had considerable experience with regard to the disease of small-pox, I presume?—Yes.

4101. What number of cases have been treated by you since you went to that hospital?—22,792.

4102. Having that experience of that large number of cases, what is your opinion on the value of vaccination as a protection against small-pox?—My opinion is very much indeed in favour of vaccination, unquestionably. It makes a great difference in the severity of the disease generally, that is to say, if it has been pretty well performed; and it also makes a vast difference in the mortality. If it is what I consider properly and well performed, the mortality is very small indeed, being only about half per cent., something under one per cent.

4103. Have you any statistics to give with respect to the number of cases which have been treated at the Small-pox Hospital?—Yes; 17 years ago I contributed a paper to the Medical and Chirurgical Society, and that paper contained the particulars of all the cases admitted then for 16 years, and I have here the particulars of 16 years more which have not been published, but which I hope will be published before very long.

4104. Are you prepared to put in any paper with respect to the cases during the last 16 years?—I have the paper here, but I would rather it came out in a medical periodical than give it on this occasion, although the Committee are quite at liberty to see it.

4105. Can you give the Committee a summary of the cases without going into the minute details?—I can give the Committee particulars from some tables. Probably you have seen my paper in the Transactions of the Medical Chirurgical Society, as you are investigating this subject. I have here in manuscript a similar set of tables as regards four of the leading points, with respect to the 16 years succeeding the former 16 years, *i.e.*, from 1852 to 1867 inclusive. The previous paper referred to the period from 1836 to 1851 inclusive. The two papers embrace altogether 32 years, with minute particulars as to every patient admitted into the Small-pox Hospital.

4106. Before you give any particulars from that statement, would you state to the Committee the distinction which you draw between good and bad vaccination?—Certainly. A good vaccination is when persons have been vaccinated in four or more places, leaving good cicatrices. I define a good cicatrix in this way: "A good vaccine cicatrix may be described as distinct, foveated, dotted or indented, in some instances

radiated, and having a well, or tolerably well, defined edge. An indifferent cicatrix is indistinct, smooth, without indention, and with an irregular or ill-defined edge." When I find that a person has been vaccinated in at least four places, leaving good marks of the kind which I have just described, that person invariably, or almost invariably, has small-pox in a very mild form.

4107. You would state persons of that position, I suppose, if they came into the hospital to be treated for small-pox, in the class of properly vaccinated persons?—Certainly. On the other hand, I find that those who have been vaccinated, in but one place, and have but one indifferent cicatrix which can be but just seen, have died in the last 16 years at the rate of 21·43 per cent., or about 21½ per cent. Among the well vaccinated, that is to say, those who have four or more good cicatrices, if they have come to our hospital, having taken small pox, the mortality has been less than one per cent., or ·86 per cent. Then the others having two or three cicatrices have had an intermediate protection.

4108. Will you state the number of cases which have been treated to which those particulars apply, from 1852 to 1867 inclusive?—The number of vaccinated cases treated in the hospital was stated to be 3,094 in the paper published by the Medical and Chirurgical Society in the period from 1836 to 1851. For the second 16 years the number has been 10,671.

4109. What are the 3,094 cases to which you have referred?—They were cases after vaccination having one cicatrix, two cicatrices, three cicatrices, and four or more cicatrices, those said to have been vaccinated, but having no cicatrices or cicatrix, and a few stated to have been vaccinated, but of which we have not the minute particulars. Then there is the subdivision whether the cicatrices were good or indifferent.

4110. Have you the particulars of the cases treated during the years from 1852 to 1867, giving full particulars about them?—I have. The second set of tables embraces more than three times as many cases as the first tables, and in most respects, I regret to say, that the mortality has been considerably greater than it was in the previous 16 years. Still they were all cases which were vaccinated before the present law came into force, with a few exceptions.

4111. To what number of cases does that return refer?—Ten thousand six hundred and seventy-one.

4112. Is that the total number of cases which went through the hospital during the 16 years from 1852 to 1867?—No, they are the vaccinated cases. The total number of small-pox cases that went through the hospital in the 16 years from 1852 to 1867, was 13,670.

4113. Will you classify those 13,670 cases?—There were 2,920 unvaccinated, of those 1,043 died, giving an average of 34·89 per cent.; and I should say with regard to that, that I have deducted

ducted the cases of what we call superadded disease, that is to say, those having erysipelas or gangrene, or other forms of disease of a fatal nature before they were attacked with small-pox, so that in order to make the thing clear and fair on both sides, as between the vaccinated and unvaccinated, I have deducted 37 of those cases. It then leaves the mortality 34·89 per cent. Then I come to the second class. There were of those 13,670 cases, 30 cases (or so they said, at least) of small-pox after natural small-pox. After natural small-pox people generally think themselves protected, but there are a very few exceptions, only 30 out of 13,670. Of those 30, six died; so that it was at the rate of 20 per cent.

4114. Mr. Cave.] With regard to the 30 cases of small-pox, after natural small-pox, have you any information as to whether they had been vaccinated?—They were not vaccinated at all, any of them.

4115. Were they all unvaccinated?—Entirely, there was no vaccination whatever. The third heading is "Small-pox after inoculated small-pox," that is small-pox occurring in its natural state, as it is called, after inoculated small-pox in early life; of this there were 29 cases, and six died; one of the six being affected with superadded disease, so as to leave the mortality 17·85, per cent. or about 17½ we may say in round numbers. When I draw the per-centage, I deduct the cases having superadded disease. The fourth heading is "After vaccination and small-pox;" of that class, there were 20 cases, and of those two died, the average being 10 per cent. Now I come to the important number,—after vaccination, with cicatrix or cicatrices, there were 10,398 cases; of these 790 died, of whom 105 were affected with superadded disease in some form or other of a fatal nature, leaving the mortality 6·65, or about 6½ per cent.

4116. Mr. Candlish.] When you mentioned superadded disease, do you mean that death was caused by superadded disease?—They had the two diseases; it is very difficult sometimes to say decidedly whether it is the small-pox or superadded disease which causes death; I can give you an instance, which occurred within the week, of a woman from Durham, about 60 years of age, who has had chronic bronchitis for some time; she was seized lately with small-pox; she had been vaccinated; her small-pox was highly modified, and she would have got well of the small-pox if she had not had the bronchitis; on the other hand, if she had not had the small-pox, the bronchitis would not have killed her now, and may be not for years; she died of the effects of the bronchitis, increased by the attack of small-pox, which latter was well modified by vaccination.

4117. You do not put her down as a fatal case from small-pox, I suppose?—That is a case which I put down in the list, as having superadded disease.

4118. Do you make any distinction in such cases?—I have them down in the register of the hospital as erysipelas, or gangrene, or inflammation, as the case may be; something of that sort occasionally kills patients in hospitals; then patients with small-pox come in perhaps in the second or still further advanced stage of phthisis, and a very little matter then finishes them off.

4119. Are there not cases of superadded disease amongst the unvaccinated?—Yes; I gave them just now as 37. Then the next heading is "Stated to have been vaccinated, but having no cicatrix." I suppose in fact these ought to have 0·37.

been put amongst the unprotected, but still they believed themselves vaccinated, and we took their account of it, but they had no mark to show that it had been done; in that class there are 263 cases, of whom 106 died; of that 106, four had superadded disease, and the per-centage of mortality was 39·38. Then there were 10 that we had missed in taking the particulars. I have occasionally been ill or not well enough to look after them at all times. These 10 all recovered, so I daresay they had all been well vaccinated.

4120. Chairman.] Does that make up the whole number of 13,670?—Yes.

4121. Mr. Cave.] You have no particulars as to those 10 cases?—They said that they had been vaccinated, but I had not counted the cicatrices.

4122. Can you break up the number of 10,671 into numbers with good vaccination and indifferent vaccination?—Yes; as regards the 10,671; of those having one cicatrix there were 2,614 cases; with one good cicatrix there were 1,059 cases; of those 34 died, five of whom had superadded disease, which, being deducted as before, leaves the mortality 2·75 per cent. With indifferent cicatrices there were 1,555 cases; of those 353 died, 25 having superadded disease, leaving the mortality 21·43 per cent. The average mortality of those with one cicatrix was 13·81 per cent. Of those having two cicatrices there were 3,172 cases; of good ones there were 1,306. The mortality was 24, six having superadded disease, and the rate per cent. being 1·38. With indifferent cicatrices there were 1,866 cases, and of those 252 died. Of superadded disease there were 28, the rate of mortality being 12·18 per cent. Then the average of the two is 7·71 per cent. Having three vaccine cicatrices there were 2,153 cases, there being with good cicatrices 992; of those 14 died; of those having superadded disease there were four, the mortality being 1·01 per cent. Then, of those having three indifferent cicatrices there were 1,161, and the mortality was 65, 10 of whom had superadded disease, rate per cent. of mortality being 4·77; the average of the two was 3·03 per cent. Having four or more vaccine cicatrices, I found by the previous table and by inquiries, that if people had four cicatrices they were pretty well protected, and very seldom died, and therefore I did not take particulars of those having more than four. The Swedes and Norwegians, who are the best vaccinators, have generally seven good marks. Of those having four or more vaccine cicatrices there were 2,459. Of those 1,263 had good cicatrices. The mortality was 11, and out of those 11 there were 10 having superadded disease, so that it leaves the mortality in that class only 0·07 per cent. With indifferent cicatrices there were 1,196 cases; of those 37 died, 17 having superadded disease, leaving the mortality 1·69 per cent., the average of the two being 0·86 per cent, or a little more than three-fourths of 1 per cent. Of those stated to have been vaccinated but having no cicatrix to show, there were 263; of those 106 died, four having superadded disease, the mortality being 39·38. Then, to make up the number, there are 10 as to whom we have not the particulars, and they all recovered. I may, perhaps, be allowed here to depart a little from the tables, and to state an inference drawn from them. I have taken together all the good cicatrices where they had one, two, three, four, or more, and I find that of those only 1·26 died; while of those collectively with indifferent cicatrices, 11 per cent. died.

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4123. Mr. *Candlish*.] Have you the totals?—Yes, the numbers were 4,620 cases; 83 died; 25 having superadded disease. Then I have deducted that 25 from the gross number, and also from the mortality, and it leaves 4,595, who are supposed to have had small-pox only. Of that number 58 died, or a mortality of 1·26 per cent. Those having superadded disease are deducted. With indifferent cicatrices there were 5,778; of those 707 died; having superadded disease there were 80. Deducting that as before from the gross number, we have 5,698 with indifferent cicatrices; the mortality being 627, or an average of 11·0 per cent. The collection of this information has cost me a portion of every day for 16 years.

4124. *Chairman*.] Have you any statistics to give with respect to the ages of the patients who have entered the hospital during these last 16 years?—I have been ill lately, and I have not worked that out; it is nearly done, but it is not finished. It is done in the first set of Tables.

4125. Do the vaccination marks during the last 16 years show a better system of vaccination than during the previous term?—They have not done so, and for this reason, that the patients admitted in those 16 years had all been vaccinated before the present system of vaccination came into operation; that is to say, that persons who catch small-pox after being vaccinated do not generally have it for from 18 to 25 years afterwards.

4126. Therefore, those who have entered the Small-pox Hospital during the last 16 years, would not be persons who have been vaccinated during that period?—Some few had, but very few.

4127. Therefore, you could not draw any conclusion from that?—I have not calculated that Table yet.

4128. Can you state whether many of those cases occurred among young children?—No, not many; in the previous Table, for the 16 years out of 3,094 cases there were only seven under five years of age, then there were 56 between 5 and 10 years of age, 206 between 10 and 15 years of age, 866 between 15 and 20 years of age, 1,058 between 20 and 25 years of age; you see how the proportion increases as time goes on; then from that time, from 25 to 30 years of age there were 526 only, about half of the number for previous five years; from 30 to 35 years of age it is 210; from 35 to 40 years of age it is 102; from 40 to 50 years of age (that is 10 years) it is 61; and from 50 to 60 years of age it is only two.

4129. Mr. *Cave*.] Are there none later?—None later that have been vaccinated; I remember one singular case of an unvaccinated old woman who had been constantly amongst small-pox. She had attended her children and grandchildren, and had never been vaccinated or inoculated, and she never caught small-pox until she was 83 years of age, and then she caught it in a severe form and died.

4130. *Chairman*.] You are not able to give any statistics of a similar character with respect to the latter 16 years?—Unfortunately the Table is not complete, and therefore it is of no use for this calculation.

4131. Mr. *Candlish*.] There has been very much more small-pox, I think you said, during the last 16 years than in the previous 16 years?—Very much; in the last 16 years we had three times as many cases at the hospital as in the pre-

vious 16 years; but it does not follow that there have been three times as many cases in London.

4132. *Chairman*.] Do you wish to make any remarks upon this Table to which you have just referred as to the number of cases in the hospital?—I think they continue much the same as to age as they were in the previous 16 years. You may say that the great number is from the age of 15 to the age of 25. From 18 to 25 in fact is the time when the largest number come in after vaccination.

4133. Have you anything to show that the mortality of those persons who have taken the small-pox after vaccination occurs at ages after puberty rather than at earlier age?—Yes; it is here stated that of the children under five years of age there were seven, and of those two died, but then they had been very badly vaccinated, indeed I have no doubt. Then from five to 10 years of age there were 56, and seven died; from 10 to 15 years of age there were 206, and 10 died; from 15 to 20 years of age the gross number was 866, and 49 died. There the mortality increases very much. From 20 to 25 years of age there were 1,058 cases, and 93 died; from 25 to 30 years of age there were 526 cases, and 55 died.

4134. Can you now give to the Committee any statistics with respect to re-vaccination?—I have not worked all these out, but I can give you a few for years since those Tables were made, or a portion of them. I see that in 1865 we had 12 cases of small-pox after re-vaccination, and two deaths. There was one case in that year vaccinated by Dr. Jenner, in which there were three indifferent cicatrices, and the patient recovered.

4135. *Chairman*.] Have you had many cases coming to the hospital with small-pox after re-vaccination, of late years?—No, not many, very few. I have another set of figures as to 1867, and I am afraid those are all I have with me. There were 11 cases in 1867, and they all recovered.

4136. Does your experience lead you to believe that the small-pox has at all a tendency to die out?—Certainly not; it is precisely the same, I believe, as it was 1,000 years ago, and will be 1,000 years hence. I can give you a Table for the last 16 years, showing that it corresponds almost exactly with the previous 16 years. In the 16 years, from 1852 to 1867, of 2,920 cases unvaccinated, 1,043 died or 35 per cent.

4137. Mr. *Taylor*.] How many of those 1,043 were affected by a superadded disease?—About 2 per cent.; it happens singularly enough that about 2 per cent. both of the vaccinated and of the unvaccinated die of superadded disease.

4138. Sir *Smith Child*.] All your statistics have reference to your own hospital, have they not?—To the hospital alone.

4139. Mr. *Taylor*.] Of the 790 deaths of vaccinated persons, you mentioned 105 as having superadded disease; would not this percentage therefore be about 12 and not 2 per cent.?—The number was 10,398; of those 790 died, of whom 105 had superadded disease; the proportion of 105 is to the gross number of 9,608, and not to the 790; I deduct the number of cases of superadded disease from the number who died, and from the whole number, just as if they never had been in the hospital.

4140. *Chairman*.] If 790 died and 105 had superadded disease, it must be deducted from the
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790; do you take the per-centage upon the 10,398 cases?—Yes; I strike the cases out just as much as if they never had come into the hospital at all.

4141. From both totals?—Yes; that I thought was the fair way of doing it, as they had super-added disease, and did not die solely of small-pox; so I strike the 105 out of the gross number and out of the number of those who died, and then I draw my per-centage.

4142. Mr. *Cave*.] You make it a per-centage of the cases in fact, and not of the deaths?—Of the whole cases, and not of the deaths alone.

4143. You stated, did you not, that you did not consider small-pox at all to have a tendency to die out, but that you thought that it was not less prevalent than it was formerly?—It is just the same as it was when I first belonged to the hospital, 35 years ago.

4144. Do you think that the influence of vaccination has had any controlling effect upon the number of people who have had small-pox?—I suppose it has had a very great effect, because the number in the country who are vaccinated is very great indeed; but I do not see how it can be come at exactly. I think that most likely a very large number are entirely protected against the influence of small-pox, although a large number in the country take it. For instance, of the cases in the hospital, about 80 per cent. are vaccinated, but that does not show at all how many there are protected through the country. I do not see how we are to get at that point; I endeavoured to get at it when I published the other paper, and if you will allow me I will read what I then said, but it is not an exact and precise statement. I have said here, "A circumstance has come to my knowledge in prosecuting this inquiry, which, in conclusion, I beg to submit to the society, and although its bearing is not so rigidly precise as the rest of this communication, the point it conveys is of an important character, substantially true, I believe, and proper to be brought forward on this occasion, as showing, on a large scale, the protective powers of vaccination. Already it has been stated that in 16 years 155 patients with and without vaccine cicatrices, or about nine a year, have been admitted with small-pox at the Small-pox Hospital, who were reported to have been vaccinated at the public vaccine institutions of London. In an Appendix to the Report from the Select Committee of the House of Commons on the Vaccine Board in 1833, there are some official returns for the previous five years of the numbers vaccinated annually at the different stations of the National Vaccine Establishment at the Small-pox and Vaccination Hospital, and at the stations of the Royal Jennerian Society in London, which together will be found to amount to 102,114; this, divided by five, gives an average of 20,422 as vaccinated yearly. About the same numbers had been vaccinated at these institutions for several years before the returns were made, were continued somewhat increased for several years later until after the time of passing the Vaccination Act in 1840 (Lord Ellenborough's Act, as it is called), "and, with perhaps some slight diminution of late years, have been continued ever since. These persons so vaccinated were, for the most part, poor persons, and also for the most part stationary, living, too, in a town where small-pox is never absent, and, in case of being attacked by it, likely to apply for admission at the Small-pox Hospital, the only place in London for the reception of small-pox patients; yet the numbers ad-

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mitted with small-pox who had been vaccinated at these public vaccine institutions have amounted but to a fraction over nine a year, or 1 to 2,108 vaccinated, and the deaths from small-pox but to 1 in 36,305 vaccinated."

4145 *Chairman*.] Of course that refers to a state of things rather more than 16 years ago?—Yes, nearly 20 years ago.

4146. Having regard to your great experience at your hospital, do you consider the natural small-pox to be still a very fatal disease?—Yes; 35 per cent. die, of the unvaccinated.

4147. Is it less fatal now than your hospital returns show it to have been previously?—Only 2 per cent. It was formerly 37 per cent., but I think that difference is made up by the very much better hospital that we have now. We have not had so much superadded disease at Highgate as we had at Battle Bridge. In the first place, that was a very bad locality, and in the next place, the hospital, though very good externally, was internally very injudiciously arranged.

4148. Do you consider that the present mode of treating small-pox cases renders the cases less fatal now than formerly?—I am afraid not. I fear we have no control over the disease; there is no specific. We have no power whatever of controlling, I think I may say, small-pox, scarlatina, measles, and the other febrile eruptive diseases.

4149. We all know that small-pox is a very mutilating disease; does it continue to be so much now as it was previously?—Terribly so among the unvaccinated and among the vaccinated who have been badly done; and that I wish very particularly the Committee to understand. It is like everything else, nearly in this world; to be useful it must be well done. The great thing is to get it well done. Now a very large number in this country are very badly vaccinated; indeed, they come under that head of one cicatrix hardly perceptible. Many of those people have small-pox just as bad as if they had never been vaccinated at all.

4150. Have you seen any cases of bad vaccination where the vaccination has been performed under what is called the present improved system?—Yes; such, I hope, under the present improved system, that the people generally are much better protected, because now the students are being taught to vaccinate at different stations appointed for teaching in London and other large towns, and they are obliged to produce a certificate of having been taught when they present themselves for examination. When they give in their certificates they are obliged at most of the institutions to show that they have been taught. In the large towns in England, such as London, Birmingham, Manchester, and Liverpool, the vaccination is now, I believe, thoroughly well done, and I have no doubt that in the next epidemic, in 20 years' time, or so, it will be seen that the protection has been very much greater than before.

4151. From the opinion which you have expressed, you must believe that if all the children in the country were properly vaccinated, the mortality from small-pox would be reduced to a very small and insignificant amount?—It would be less than one per cent.; but the difficulty is to get it well done; there are several difficulties which, perhaps, I hardly need mention to the Committee; there is the opposition of mothers to having their children well vaccinated; there is bad weather, which may sometimes interfere with arms coming that it would be very desirable to have

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have to vaccinate from, and many undertake to vaccinate without knowing how to do it; and although there is a law at the present time about it that students should be taught, yet the young men unfortunately look upon it as a trifling operation, which nearly anybody might perform, and (many of them) they persist in doing so still; it is very wrong of them, but still they do so.

4152. It has been stated that vaccination is apt to produce diseases in the children operated upon; is it the case that natural small-pox itself does often produce disease in those predisposed, for instance, to scrofula?—Yes, it excites it; it lights it up; it sets it going where otherwise perhaps it would not be set going; it sadly damages the constitution; when scrofula is in abeyance, any severe disease like small-pox would set it in action.

4153. You have of course often seen cases where small-pox and vaccination are running their courses at the same time?—Yes, I have a case in the hospital now.

4154. Can you state what is the influence of the vaccination in a case of that kind?—It wholly depends on time; perhaps I had better give you such an instance as I have given in a paper which I wrote a few years ago on the subject; I do not know that I can make it clearer than by stating it in this way: supposing that a child takes small-pox on Monday, you may leave that child unvaccinated until Wednesday, 48 hours; vaccinate it then and you save it from small-pox; put it off from Monday to Thursday before you do it and the small-pox, if it occurs, will be modified; if you leave it to Friday, another day, the vaccination will have no influence over it whatever; it just depends upon the time.

4155. Mr. Cave.] Will both diseases appear?—Yes, the vaccination may go on; I have a case in the hospital now; the vaccination is going on very well, but it is just too late, and it does not influence the small-pox a bit.

4156. Chairman.] That perhaps would account, would it not, for some cases which have been mentioned before the Committee, in which the fact of persons having been re-vaccinated has been stated to have been no protection to them?—Yes; I may say in addition, that the vaccine disease in a re-vaccinated person runs a shorter course. It becomes operative sooner than it does in the unvaccinated, and therefore I perhaps might say that if done two days later, such person would still be benefited by the vaccination. Taking the instance which I have given, if the second vaccination were put off till the Friday, it would very likely be in time. The main object is to get vaccination on to the stage of areola before there is any influence from the small-pox. If you do that, then you save persons from the small-pox, or you get the small-pox modified.

4157. You have stated to the Committee your opinion very strongly with respect to the vaccination of children in infancy. What is your opinion with regard to re-vaccination, and as to the time of life when it ought to be performed?—I think it ought to be performed just after puberty; I think that is the best time, because such a great change takes place then. Of course if there is small-pox in the house or about, it may be advantageously done two or three years sooner, for occasionally I have seen rather a bad case of small-pox at the age of 13, when the child has been indifferently vaccinated; but if it has

been thoroughly well done, it need hardly be done at all. I have refused to do again a great many of my own cases that I did 15 or 20 years ago; I tell them they need not be done again.

4158. Is that where you see the marks on the arm remaining perfect?—Yes, such as I have read a description of. I have been a large vaccinator in this town for many years.

4159. What number of vaccinations do you think that you have performed in your time?—From 60,000 to 70,000, and singularly enough, there has not been a single one in the hospital during this epidemic that I have vaccinated.

4160. Have you known of any case that you have vaccinated having small-pox, in which the disease has proved fatal?—Not fatal; but I have known one rather severe case.

4161. Mr. Candlish.] Would you know your own case by the appearance of the arm?—Yes, most workmen know their own work.

4162. Chairman.] You have known your own cases taking the small-pox?—Yes, I think we have had perhaps from 15 to 20 such cases out of the 70,000 in 35 years. I had been vaccinating constantly for 18 years before I saw a case at all, but I have no objection whatever to see them, because I know they are almost invariably well modified, and do not leave any marks or any mischief behind.

4163. Do you believe, from your experience of the disease of small-pox and the effects of vaccination, that vaccination, when properly performed, is attended with any injurious consequences?—No, none whatever, that I know of. Occasionally one sees rather a sore arm, but it is not every child even that looks well that is in perfect health; and now and then, as might be supposed, we vaccinate them when they are bordering on some illness or other.

4164. In the evidence given before this Committee it has been stated that various diseases, such as syphilis, erysipelas, and other diseases, have occurred to children after vaccination, and those diseases have been attributed by the parents to vaccination; what is your opinion upon that point?—I have never seen syphilis after vaccination, and have never had any reason whatever to suppose that a child had taken syphilis from being vaccinated by me. Occasionally I have seen erysipelas after vaccination.

4165. Have you seen any other disease occurring after vaccination?—No, none that I could attribute to vaccination. Women are apt to blame vaccination for nearly everything that happens to their children afterwards. It does produce some slight eruptions of no consequence. For instance, in the very hot weather of 1868, and last summer, we saw a good deal of a papular eruption; but it is a thing of no consequence, and it subsides in a few days; I rather like to see it, because it shows that the vaccine disease has gone well through the constitution. Erysipelas occurs sometimes, and we might probably expect its occasional occurrence by the child being vaccinated at an unlucky time. If the child has a cold it makes it feverish, and that would be a bad time to vaccinate it.

4166. Referring to what you have stated about what you consider to be good vaccination, do you know whether the present system attempts to carry out vaccination according to that standard?—It does do so, and it is very generally carried out well I believe now; especially as I have said, in large towns, and more particularly since that paper of mine,

mine, in 1853, came out; when I showed the necessity of doing it in at least four places, and that persons so vaccinated were so much better protected than those vaccinated in one place.

4167. Do you consider that the present plan of having large districts for vaccination is an improvement upon the old plan?—Yes, I do; inasmuch as vaccination will be done by men who are constantly in the habit of doing it, and for the most part they do it the best; there is another strong reason why it is desirable; it is not every arm from which it is suitable to vaccinate, and every vaccinator likes to have a choice of five or six, or more arms to select from for his vaccination of the day.

4168. But does it not create a considerable opposition on the part of mothers that they are called upon to have their children vaccinated at large stations from the arms of children of whom they know nothing as to whether the parents are healthy or unhealthy?—No; they see the child there, and if it looks pretty well they are satisfied; I vaccinate at, I believe, the largest station in London, and I do not find that they object.

4169. Are they allowed to object to the lymph being taken from any particular child?—Yes; they say they would rather have it done from some particular child there; perhaps it is a neighbour's child, or some nicely-dressed, clean child that they see in the room, and they prefer it on that account.

4170. I suppose that in your own cases of vaccination you are particular as to the child from whom you take the lymph?—Yes; very much so indeed, because I have always before my eyes at the Small-pox Hospital the result of doing it badly.

4171. But having that feeling yourself, do you not think that the feeling on the part of the mothers is natural that they would like to know something about the child from whom the lymph is taken?—Yes; but they cannot always bring a neighbour's child of whom they know the history to have their own child vaccinated from it.

4172. Do you think that the same care is taken to protect the poor as is taken by the richer classes to protect their children?—Yes; I should say so at the public stations, certainly; I would send children away unvaccinated sooner than use lymph from a suspicious arm that I did not approve of.

4173. What do you call a suspicious arm?—If a child did not look very well, and perhaps had too much inflammation about its arm from being in a feverish state then, I should not by choice use the lymph from that child, and therefore I would put it off and send the mother away, and either get another arm or use my preserved lymph. It is very seldom indeed that I have to do that; just at Christmas time perhaps, once or twice, when but few are vaccinated, it may happen.

4174. I suppose that you are quite aware that there is a strong feeling, and a great objection on the part of a number of people, against vaccination?—Yes, I know there is; but I nearly always find that it is the father who objects and not the mother, and it makes it very suspicious.

4175. What do you mean?—The father would like the family as small as possible that he has to work for; I am afraid that that is at the bottom of it.

4176. Do you not think that that is giving credit to the father for looking much further ahead than people in that class of life generally do?—I do not think that they have very far to

look when they have their daily bread to earn; when the wages coming in on Saturday night it pretty often comes to their mind how the money is disposed of.

4177. Knowing that there is an objection to vaccination on the part of many persons, of course you would quite agree that vaccination, if carried out in a compulsory manner, ought to be done so as, as far as possible, to satisfy the parents that it is done properly, and that the lymph is well selected?—Yes, unquestionably I think that ought to be done; and only men should be entrusted to do it who have taken the trouble to learn how to do it, and how to select their lymph for use.

4178. Do you approve of the present law, with respect to making vaccination compulsory, and imposing a penalty on the parent who refuses to have his child vaccinated?—Yes, I do not see that you can persuade many of them to be vaccinated, as Sir Dominic Corrigan said; you must deal with them by law, I am afraid.

4179. Would you go so far as to say, that a parent who refuses to have his child vaccinated should be sent to prison?—You must fine him, and if he does not pay the fine, you must send him to prison for it.

4180. So far you think that the present law as to penalties is a proper one?—I do, because it is a very serious thing indeed to spread small-pox about, and every means, I think, should be taken to prevent it. It is a very fatal disease among the unvaccinated.

4181. Supposing that a parent had a strong conscientious objection to his child being vaccinated, thinking that it might introduce other diseases; would you still compel him to have his child vaccinated?—One hardly knows how to deal with such a man; I would do all I possibly could to persuade him, and if he is a reasonable man, he would comply; there are some few, but they are very few indeed, in the higher ranks of life who do not like to have vaccination performed.

4182. Do you believe that any ill effects have arisen from vaccination in past years from its having been badly or carelessly performed, or from the lymph having been taken from unhealthy children?—Yes, I think I have known some instances of bad results from its being carelessly performed, inasmuch as the lymph has not been well selected for use.

4183. What have been the effects that you have known?—Erysipelas, but nothing else.

4184. Therefore your strong opinion with respect to the advantages of vaccination, has reference to its being properly performed under the system which you yourself carry out, and which you recommend to be carried out?—Certainly.

4185. Mr. Cave.] You stated, did you not, that small-pox has no tendency to die out, or to be less fatal?—Not of itself. Small-pox always prevails in London; London has never been to my knowledge entirely without small-pox for 35 years.

4186. Then vaccination has produced no effect upon the general population?—I should think it has very much.

4187. Are not those two statements contradictory?—The population of London has increased amazingly within the last 35 years.

4188. But did you not derive your reasoning from per-centages; you stated that the per-centages of deaths had been 37 per cent. in one period, and 35 per cent. in the other?—Yes.

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4189. Then

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4189. Then that would have nothing to do with the actual population, would it?—Not the actual spread of the disease. Until lately, there has been no other hospital but ours for the reception of small-pox patients. Lately, as the Committee are aware, there have been temporary hospitals put up and two permanent ones erected.

4190. But I want to get your opinion, which would be very valuable upon this point. When you state that small-pox has no tendency to die out, or to be less fatal, I suppose that supposition is based upon what you have seen among cases which have broken out upon the percentages of the population?—I cannot tell how many out of the whole population take small-pox after vaccination, but it is a very small number indeed, compared with the whole number as I have stated to the Committee already. The public are pretty largely vaccinated now, and will be more and more so every year, I should think, as time goes on. There is one point which has not very clearly been brought forward this morning, and that is the increase of small-pox after vaccination year after year. When I first went to the hospital 35 years since, from 1835 to 1845, the admission of patients into the Small-pox Hospital was 44 per cent. of small-pox after vaccination; from 1845 to 1855, 64 per cent.; from 1855 to 1865, 78 per cent.; and during 1863 and 1864, 83 and 84 per cent. Those are patients who have been vaccinated.

4191. You stated that small-pox had no tendency to die out, but it seems from what you say now, that you would qualify this, because you do not know whether or not small-pox is more prevalent than it used to be among the general population?—No; I have no means of getting at that.

4192. Then, when you say that small-pox has no tendency to die out, you merely mean that small-pox is in existence because patients come into the hospital?—Certainly; it is in existence, and the greater the number of unvaccinated persons, probably the more severe the disease would be; and the same as to the badly vaccinated, because they are more likely to spread the disease than persons who have it in a mild form.

4193. You have no means of knowing whether small-pox generally is more or less prevalent among the general population since vaccination than before it?—No; I have no means of ascertaining that.

4194. But you have means of ascertaining whether it is less fatal or not?—Yes, that I have shown to you.

4195. And your opinion seems to be that among the unvaccinated it is not less fatal than it formerly was?—It is not less fatal than it was 35 years ago.

4196. Therefore, whether the disease is more general or not, at any rate it is not less virulent?—It is about the same, and it corresponds in other countries with England. They have quite as large a mortality among the unvaccinated in Germany and in France, as we have in England.

4197. Do you consider that the sanitary condition of any place would have an effect upon either the prevalence or the virulence of small-pox?—Yes, I think there is no doubt about that. Leaving the refuse which comes from patients about in open drains, of course would be more mischievous than if it were conveyed away in

sewers. I cannot give any precise information upon the subject, but I have no doubt that a well-arranged sanitary state of things would have a good effect.

4198. Would a bad sanitary state of things make the disease of a worse type or more prevalent?—More prevalent probably. I do not know that it would make it of a worse type, unless the air were very foul indeed where the person was residing.

4199. What do you consider to be the cause of virulence in small-pox?—That I cannot answer. I cannot tell you why a person has the hæmorrhagic form of the disease in place of any other form. We have seen lately a large number of cases of the hæmorrhagic or malignant form of small-pox. It has been unusually prevalent during the last six months.

4200. I suppose that in an epidemic the tendency is that the disease is more virulent than in an ordinary year?—Yes; and it is generally more virulent and fatal at the beginning than at the end of an epidemic; it will get gradually more mild.

4201. Is there any difference at different times in the probability of contagion or infection?—Yes, I think there is; for we find that epidemics nearly always begin in the autumn, and that we might probably suppose would be the case in the moist weather of November and December; that is the time when it spreads. You would suppose that it would spread more when the air was damp and moist, than in a dry clear atmosphere, but when it has once been set going, I do not think it is much influenced by weather.

4202. Is it both infectious and contagious?—Yes; there is another reason for its spreading more in the winter, since the poor especially, who may not be well off for fuel, and may be short of room, keep their houses shut up.

4203. Then your opinion is rather doubtful as to whether or not vaccination has any effect upon the spread of the disease?—It will have it in the way which I have explained before, that a very large number who have been vaccinated are not susceptible of small-pox.

4204. You do not think that vaccination would have any effect upon small-pox coming as an epidemic?—As I have said, there are a very large number who do not take it at all who have been vaccinated; I suppose it is the air being favourable for the spread of the disease that causes it to become epidemic.

4205. But in those cases do you think that there is a large number of persons who are not susceptible?—I think so of the vaccinated, and some few of the unvaccinated, and it is a very fortunate provision of nature, for if you expose 20 persons who have never been vaccinated to the influence of small-pox, the whole 20 will not take it on that occasion. You may say that 10 will take it, and fortunately, 10 are left to take care of the sick, and out of those 10, two or three years afterwards, four or five may take it, and so on, till the whole number had been worked up.

4206. But when you state that vaccination renders a large number of people incapable of taking small-pox, would not that in a series of years, and with the large number of vaccinations which have taken place, have a sensible effect upon the actual existence of the disease?—I have no doubt that it would.

4207. But it has not had this effect, has it?—In this great town, where there are so many badly vaccinated, as well as unvaccinated people, I do not

not know how we can get at the actual number.

4208. You think that we have not arrived at that perfection of vaccination which would cause a sensible diminution of small-pox?—A good system would do it. It protects people, I think, mainly. The Committee have heard, no doubt that in the 35 years during which I have been at the Small-pox Hospital I have never had a nurse or a servant the whole time who has taken small-pox there. I re-vaccinate them when they come there, and they never have small-pox, although they are exposed to infection every day.

4209. You state that vaccination, when properly performed, is very nearly a certain preventive, and yet that there is no apparent diminution of small-pox; would not that lead you to infer that in a vast number of cases the operation is imperfectly performed?—We know that it is often imperfectly performed.

4210. Do you think that it is much better performed now than it was?—Yes; I have no doubt of it.

4211. And therefore, you would say that we have not yet arrived at that point at which vaccination would cause a sensible diminution of the disease?—Not from the late measures which have been adopted and enforced by the Government.

4212. Ought not cases of small-pox to be isolated at once?—Yes, I think the sooner the better; because the disease is a great deal more infectious, I believe, in the early stage than it is in the late stage, and that it is infectious from the breath before the eruption has appeared on the body.

4213. It is exactly the opposite to scarlet fever in that respect, is it not?—I look upon scarlet fever as the most infectious disease that there is, and probably small-pox is the next.

4214. We are told that stage of peeling which is the last stage of scarlet fever is the most infectious, is that so?—I do not believe that it is the most infectious, but the infection remains somehow about the patient, in the furniture and woollen curtains and carpets in the room for a long time.

4215. That is not so much the case with small-pox, is it?—Not so much as in the case of scarlet fever.

4216. Does bedding and furniture retain the infection of small-pox?—Yes, it would I suppose, and then many people are so dirty in their habits that they would be likely to make their bedding contaminated.

4217. At any rate you would consider that infection is produced in many cases by not isolating the patient?—Yes.

4218. Have any of the nurses in your hospital had small-pox before they have been engaged as nurses?—Some of them.

4219. And still you re-vaccinate them when they come in?—No.

4220. Do you consider that small-pox itself is as great a protection as vaccination?—Yes, much greater, as you see from the returns. There are a few cases of persons who have had small-pox after small-pox; and in the first Table, which I gave the number, was less than 1 per cent. of small-pox after small-pox, whereas it was 53 per cent. of small-pox after vaccination.

4221. Do you consider, in fact, that vaccination is a protection, because cow-pox is a modified form of small-pox?—It is modified in passing through the cow.

4222. But it is a great protection, is it not?—Yes.

4223. And small-pox is a greater protection?—Yes; but the worst of it was that inoculated small-pox spread the disease, and occasionally persons died of it. They very rarely die from being vaccinated.

4224. Cow-pox not being infectious?—Not at all.

4225. *Chairman.*] As to your answer to the Right honourable Member for New Shoreham with reference to some of the nurses having had small-pox before you engaged them, will you explain that statement which has been made to the Committee that some of the nurses of the Small-pox Hospital have been seen to be marked with small-pox?—Yes; but that very nurse who was alluded to was a person who has remained with us after being a patient.

4226. That case was the case of a person coming in as a patient and engaged as a nurse after she recovered?—Yes, she came in as a patient, and she was for some years the matron's housemaid. She left us for a short time and came back again, and she is now our head nurse. We never had so many employed in the hospital as we have at this time, who came in as patients; for in consequence of the want of nurses at the other large hospitals which have been established lately we have not had quite the same facility of getting nurses, and we have employed those who have come in as patients, and who are willing to stay.

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F.R.C.S.

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Tuesday, 2nd May 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Sir Dominic Corrigan.

Mr. William Edward Forster.
Mr. Hibbert.
Mr. Holt.
Lord Robert Montagu.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

JOHN TOMLINSON HIBBERT, Esq., IN THE CHAIR.

Mr. JAMES FURNESS MARSON, F.R.C.S., re-called ; and further Examined.

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4227. Mr. *Candlish*.] THERE is a difference of opinion amongst medical men as to whether lymph will convey any other than the vaccination disease; have you any opinion upon that point?—I have no evidence whatever that it does so.

4228. In answer to Question 4164, you state in the first words of your answer, "I have never seen syphilis after vaccination;" and in the last words of the answer you say, "Occasionally I have seen syphilis after vaccination;" will you explain that apparent discrepancy?—It should have been printed, "Occasionally I have seen erysipelas after vaccination."

4229. Are you of opinion that syphilis cannot be communicated through the vaccine lymph?—I have never seen, in a very large experience as a vaccinator, anything of the kind. We all know pretty well that syphilis is communicated by contact, and so far it is just possible that it might be so communicated, but it is very unlikely in the hands of a careful man.

4230. You will, I presume, have no doubt that it may be conveyed if blood be mixed with the lymph?—I do not know that. It has been stated so a good deal lately, but I do not know of any precise experiments having been made with the blood, from persons with syphilis, by inoculating patients with the blood.

4231. Do you know anything of the case which has created some little discussion during the last fortnight?—I have heard of it.

4232. Do you concur with the opinion given here by Mr. De Méric, who said that "he did not agree with the statement, that if pure lymph only were taken from the arm of a syphilitic child syphilis would not be conveyed"?—Certainly, I agree that if it were pure lymph only syphilis would not be conveyed.

4233. You do not concur with Mr. De Méric, who dissents from that view?—If it were pure lymph I do not think syphilis would be so conveyed.

4234. He adds, "It must be remembered that the vaccine lymph itself was formed from the blood, and therefore it might be the means of conveying disease;" do you agree with that?—It might be so. I know he is a very clever man, and

he would give a very good opinion upon the subject. There is a Frenchman named Rollet, of Strasbourg, who has written upon the subject, and he says, that you may vaccinate two or three children with safety from a syphilitic child, but that if you do four or five, in all likelihood you give syphilis; by that, I suppose, he means that you will have some fluids from the body of the syphilitic child beyond the vaccine lymph.

4235. I think that Mr. De Méric says, that the vaccine lymph itself was formed from the blood, and therefore might be the means of conveying the disease?—Yes, but I refer to Rollet.

4236. And you respond that it might convey disease?—I suppose it might do so, but I have no evidence that it will do so.

4237. Are you prepared to say that even lymph would not convey syphilitic disease?—I have never seen it, and, as I stated the other day, I have vaccinated between 60,000 and 70,000 people.

4238. Has the historic fact that syphilis can be conveyed by vaccination been proved on the Continent?—Yes, I believe it has; and at Rivalta there was a Commission appointed to inquire into the subject.

4239. Mr. De Méric states: "In one instance in Britany 30 or 40 children had contracted syphilis, in consequence of being vaccinated from a syphilitic child; the occurrence had been investigated by a commission of the Academy of Medicine in Paris, who had ascertained, beyond doubt, that the transmission took place as described;" is that a historical fact?—I do not know that it is; I am alluding to the case at Rivalta, and I do not know the particulars of the occurrence in Britany; they have had syphilis after vaccination in France, and they have had it in Germany.

4240. From what you know of the case to which you refer, would you infer that this might be true?—Yes, certainly.

4241. Do you know Mr. R. B. Carter in the profession?—I do not know him.

4242. He thought "that syphilis might be communicated without the obvious introduction of blood;" you think that that is just possible too?

—I do

—I do not know that it is; I have never seen it, and I do not like to say that a thing is possible that I have never seen. I should not say that it was likely to do so, because I have never seen it, in vaccinating a very large number of people.

4243. This further description occurs: "It was a common practice, in taking lymph from children's arms, to wait for some minutes until the vesicles became refilled; the matter then consisted of exudation, which might be capable of transmitting disease"; do you concur in that?—A vaccine vesicle is full of little cells: we puncture it in several places, and wait until the lymph exudes.

4244. Do you concur that the matter exuding might convey disease?—I do not say that it might, because I have never seen it in a very large experience; it is possible, I suppose. I do not say that it is impossible.

4245. Do you reject lymph when you find it in a turbid condition?—Yes, I am very particular indeed in selecting lymph.

4246. Then turbid lymph welling up in this way might communicate disease, might it not?—It is not fit to use, and ought not to be used.

4247. It becomes turbid, does it not, after a time?—Not when the vesicle is in a nice state for affording a supply of lymph for vaccination.

4248. Mr. Carter also adds, "In one instance, in which he had applied to the National Vaccine Establishment for lymph, he had found the fluid in the tubes inert, and on examination had been led to the conclusion that it was saliva;" could that happen?—I do not know; I never filled my tubes in that way.

4249. Have you known a case of lymph from the arm of a child suffering from syphilis having been used at the Vaccine Hospital?—No, certainly not; I should make a point of not using it if I knew the child was suffering from syphilis.

4250. If pure lymph will not convey any other than the vaccination disease, is it of any moment whatever from what other disease the child whence you take the lymph is suffering?—I think as a matter of caution and proper care, we ought not to take lymph from a child who we know is suffering from disease.

4251. On what ground would you reject that lymph?—If the child is suffering from some disease, it is not fair I think to the public to use lymph taken from that child.

4252. Notwithstanding that the lymph is just as effectual and pure as the lymph from any other child?—Probably that may be so, but the diseased child would not produce lymph which I should take by choice for vaccinating others with; the finer the child the finer the arm, as we call it, and the better the lymph, probably. We require to have a good supply of arms to select from to carry on the vaccination well.

4253. May there be impurities, such as blood mixed with lymph, undetectable by the naked eye?—I think not, you would see a little redness from the blood in the lymph in that case.

4254. If blood is mixed with the lymph it would convey disease, would it not?—I do not know that it would. I only know one instance where it is recorded that blood was used for inoculation. In France, some years ago, they inoculated an unfortunate person with the blood of a scarlet fever patient, and the person experimented upon died. It is recorded in one of the French journals, and I take it from the record. I did not see it.

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4255. Do you concur with Mr. Simon, that the mixing of blood with lymph may have such an effect?—You have asked me that question in two or three forms, and I have said that I have never seen it, and therefore I do not like to say that it might so occur.

4256. If it did occur it would be at all events a consideration more or less important to be kept in view when we are vaccinating and enforcing vaccination by the compulsion of law, would it not?—Certainly. But I have been vaccinating for thirty-five years, and I have vaccinated between 60,000 and 70,000 persons, and never had such an accident; and, therefore, I infer that it ought not to occur with common care.

4257. But you are aware (for you have given evidence of the fact) that very much mischief has resulted from the action of a careless or an insufficient or an uninformed or an unskilled vaccinator?—I should not think of mentioning the name of the person I allude to, but he has had several cases of severe erysipelas after vaccination, and therefore he is probably a careless man.

4258. You stated, did you not, that a very large number of children in this country are very badly vaccinated?—Certainly; and I am very sorry for it.

4259. And you add, "Many undertake to vaccinate without knowing how to do it"?—That is quite true.

4260. "And although there is a law at the present time about it, that they should be taught, yet the young men unfortunately look upon it as a trifling operation, which nearly anybody might perform." You are describing the present state of facts?—That is exactly as I gave the words.

4261. That would be a consideration which should be kept in view when we enforce vaccination, would it not?—Yes, unquestionably. All vaccinators ought to be properly taught. It is seemingly simple, but there are very few indeed who do it thoroughly well, and with the certainty of success.

4262. Your personal success all the world knows very well?—I beg your pardon, there are a great many who do it as well as I do.

4263. But we want something more than that, I apprehend, to justify us in enforcing vaccination, viz., that when we enforce it we should secure that the thing is rightly and effectually done?—Yes, certainly.

4264. And you know many cases where it is not, and cannot be, so performed, because of the inefficiency of the operator?—Yes, and of the supply of lymph. It mainly depends upon the operator; if he does not know how to do it, if it is ever such good lymph he will not do it well.

4265. Is it possible to set up such a vaccination establishment, if I may use the phrase, over the entire country, as that the entire country shall be supplied with safe lymph, and with accurate operators?—Yes. In great towns such as London, Manchester, Liverpool, Birmingham, Sheffield, Bristol and Newcastle, it is pretty well done.

4266. Do you think that the operators there are competent to perform their duties?—I have no doubt that they are, because they have been appointed by a gentleman who knows the subject very well.

4267. There may or may not be the same ease in procuring adequate operators in sparsely populated districts; is that what you mean by drawing

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Mr. Marson, ing the distinction between town and country districts?—Those who undertake to vaccinate the poor now are required to undergo an examination, or to have been taught.

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4268. There is a difference of opinion amongst the profession, is there not, as to how many punctures are effectual?—No doubt there is a difference of opinion about it.

4269. Would you lay down by statute how many punctures should be made in order to comply with the law?—It depends upon how the operation is done. If it is done simply by puncture I would do so, but one vesicle produced by numerous scratches is as good perhaps as two or three vesicles produced by punctures.

4270. Then you would leave it to the discretion of the operator as to how he ought to vaccinate?—He ought to do it one way or the other; either by several punctures, or as they do it in Scotland by scratches, clustered together so as to leave a cicatrix as big as a sixpence.

4271. You would have the operator free to do it as he pleased?—He should be required to do it either in one way or the other; either by punctures or by several scratches which leave a large vesicle. It is a very serious thing to leave persons badly vaccinated, because then they suffer from small-pox just as much as if it were not done at all. There are certain parts of the country where I have observed that vaccination has been very badly performed, especially in the eastern counties of England, the worst of all being Suffolk; Essex is very bad; Wales is bad; in all the counties bordering on the eastern counties it has been badly done, as well as in Wiltshire, Berkshire, and Somersetshire.

4272. That is so, notwithstanding that the compulsory law has been in operation?—I speak of what happened 30 years ago or more, because I began to observe vaccinated cases particularly 35 years ago. The cases which I then examined carefully were cases which had been done 20 years before that; because, as I have stated, they come in between 18 and 25 years of age; but we observe at the hospital the same thing to this day, of persons vaccinated in these counties from 18 to 25 years since.

4273. Then when you are speaking of the bad condition of some parts of the country as regards vaccination, you are not speaking of the present time?—Certainly not, because there are a great many men now in the country who have been taught; the teaching has been going on for 11 years now; they are taught in the large towns of England, as well as in London; there are several teachers in London.

4274. I think you stated in your evidence that dormant constitutional disease may be developed by the administration of vaccination?—Yes, any febrile disturbance of that sort may light it up.

4275. You stated, did you not, that vaccination might produce erysipelas?—It might produce erysipelas just as if you scratched your finger; if you were in bad health it might produce erysipelas.

4276. Might death result from that erysipelas consequent upon vaccination?—Yes; a little wound on the skin, such as a scratch on your finger, might produce erysipelas and death.

4277. Would not the development of this dormant disease be an evil?—Scrofula may be so developed; but it would not be so likely to be developed by vaccination as by small-pox itself in a person who had recovered from small-pox.

4278. Might that disease, set in activity by vaccination, in the absence of vaccination, lie dormant for life?—No, I should think certainly not, unless the life were cut short.

4279. Speaking of vaccination, you stated, did you not, that it excites scrofula: "it lights it up; it sets it going where otherwise perhaps it would not be set going"?—I would correct that by saying that it may excite some scrofulous action; that would be a better way of explaining it.

4280. You say: "it sadly damages the constitution; when scrofula is in abeyance, any severe disease like small-pox would set it in action"?—Yes, measles or scarlet fever probably would have that effect.

4281. Do you mean that vaccination sadly damages the constitution?—No, I do not say that it does; I say that small-pox sadly damages the constitution. The question put to me is thus: "It has been stated that vaccination is apt to produce diseases in the children operated upon; is it the case that natural small-pox itself does often produce disease in those predisposed, for instance, to scrofula"? To that my answer is: "Yes, it (that is, small-pox) excites it; it lights it up; it sets it going where otherwise perhaps it would not be set going; it sadly damages the constitution." That is small-pox, not vaccination, "when scrofula is in abeyance any severe disease like small-pox would set it in action." I do not think I could improve that.

4282. You mean small-pox, not vaccination?—I mean small-pox; I say small-pox.

4283. You nevertheless concur, I think, in the opinion that vaccination will also light up latent disease?—No, I have never said anything of the sort.

4284. You have said so to-day, have you not?—It would produce erysipelas.

4285. Have you not stated that vaccination may excite scrofulous disease?—I think I never said that, or I never intended to say that. What I think I said was, that any febrile disturbance of that kind may light up dormant constitutional disease.

4286. Vaccination may also be followed by small-pox, may it not?—Yes, unfortunately it may.

4287. It is not an absolute protection then, is it?—No.

4288. You have stated that in point of fact there has been more small-pox during the past 16 years, ending with 1868, have you not?—In London, but not in the country, perhaps, generally.

4289. Do you draw any inference from the fact that we have had very much more small-pox during the last 16 years than in the previous 16 years?—That is quite another question. We have had more, because there is but one Small-pox Hospital in London, and London has increased three-fold within the last 50 years.

4290. Is it your opinion that small-pox has or has not increased during the last 16 years?—I should think it has not. It was one of the most prevalent, severe, and fatal diseases in this country 100 years ago.

4291. Does it remain pretty much as it was then?—As regards the unvaccinated, but not as regards the vaccinated. Indeed there were none vaccinated 100 years ago.

4292. I have been a little uncertain how to construe this passage in your evidence at Question 4190. "There is one point which has not very

very clearly been brought forward this morning, and that is the increase of small-pox after vaccination, year after year?—When I first went to the hospital, 30 years since, from 1835 to 1845 the admission of patients in the Small-pox Hospital was 44 per cent. of small-pox after vaccination; from 1845 to 1855, 64 per cent.; from 1855 to 1865, 78 per cent.; and during 1863 and 1864, 83 and 84 per cent. Those are patients who have been vaccinated." The cursory reader would infer from that, that small-pox in vaccinated patients had increased in those proportions; is that your meaning?—It has increased very much in London, I suppose, because the proportion of the vaccinated is greater. I hope that as time goes on, we shall hardly ever see a case of small-pox in the unvaccinated, and a very good thing it will be that we do not do so.

4293. Do not those figures seem to indicate that notwithstanding the extension of the practice of vaccination, small-pox, after vaccination, has increased proportionately?—Yes; because the public are more vaccinated. There are more people for small-pox to act upon now than there used to be.

4294. Has small-pox among the vaccinated increased in proportion as vaccination has increased?—In the population, as time goes on, there are a greater number of vaccinated people to be attacked.

4295. Has the increase of small-pox after vaccination been in proportion to the increase of vaccination?—That I cannot tell; it has increased very much of late years, and some persons are probably hardly yet open to attacks of small-pox.

4296. As small-pox has increased very much of late, namely, from 44 per cent. in the years 1835 to 1845 to 83 and 84 per cent. in the years 1863 and 1864, is it not a fair and truthful inference that small-pox has continued, notwithstanding vaccination?—Yes, unquestionably it continues, but there are large numbers still unvaccinated.

4297. Is not the disease still undiminished, not as regards its virulence or severity, but as regards the number of small-pox cases?—I can only answer that question by referring again to the vast increase in the population.

4298. At Question 4193, you are asked this: "You have no means of knowing whether small-pox generally is more or less prevalent among the general population since vaccination than before it?" And your answer is, "No, I have no means of ascertaining that;" is that correct?—I do not know that I have anything to add to that, except by saying that we have had epidemics more frequently of late years.

4299. So that really from your own knowledge and attention to the subject, you are not able to advise the Committee that vaccination has or has not diminished small-pox in breadth of attack, apart from its virulence?—It gives the people great protection if they have been well vaccinated; if they had not been vaccinated at all, vast numbers would die of small-pox. If they remained congregated together as they do now unvaccinated, you would probably have three or four or five times the mortality that there is now.

4300. The impression left upon my mind by your answers to the questions of the Right Honourable Member for New Shoreham, was that you had really not formed a definite opinion as to whether the spread of the disease had been reduced or not; is that a correct impression?—

There is a very large number who have been vaccinated, and who are not susceptible of small-pox.

4301. You have also found, have you not, that some who were unvaccinated, were unsusceptible of small-pox?—Very few. I gave you one case, the other day, of an old woman who was not susceptible at first, but who became so afterwards; and I explained, the other day, that it was a very lucky thing that if 30 unvaccinated persons, for instance, be exposed to infection, they do not all take it at once.

4302. Have you not known vaccinated persons to resist small-pox again and again, and to take it at last?—No, I do not know that I have; but I cannot answer that question. I suppose that people who take it in advanced life have been exposed to it perhaps at some time or other.

4303. There is a difference of opinion in the profession as to the necessity for re-vaccination at puberty; on the whole, do you incline to the opinion that it is not necessary, if vaccination has, in the first instance, been properly performed?—Yes.

4304. Then would you make re-vaccination compulsory?—That is a difficult question again, because, as I have already explained to you, there are very many in the country who have been badly vaccinated; and if you say that they need not be re-vaccinated, you leave them open to catch dangerous small-pox. As a general rule, it is a good plan to re-vaccinate after puberty. You need not re-vaccinate those who have been thoroughly well vaccinated before, and the vaccinators themselves can very well make those exceptions.

4305. You have expressed an opinion, have you not, in favour of the law as it stands?—I think that is a matter more for the House of Commons than for a medical man to decide about. They must deal with ill-doers as best they can.

4306. You find, in point of fact, do you not, that the law, as it stands, does not infallibly secure vaccination?—It does not; but get all the medical men well taught to vaccinate.

4307. I was not alluding to that, but to the power of resistance in the people. If a father resists, are you aware that there is no power in the law to secure the vaccination of his child?—That is a misfortune possibly, but that is for the House of Commons to decide about.

4308. Then, we have not now, in point of fact, the means of certainly securing vaccination; is not that the case?—Perhaps so. The legal point was not made sufficiently stringent.

4309. You will hardly justify the law as it stands in that case, would you?—I think it does pretty well; but there are a few folks in this world who are always difficult to manage about anything.

4310. The general fact as it seems to me is this; that all our legislation on this question (and possibly on others as well) is founded upon the opinions of the professional men of the country; that is so, is it not?—Yes, they are very much in favour of vaccination, taking them altogether.

4311. And there is very much divergence on this point as on others, is there not?—Not very much; not one in a hundred, or one in a thousand among medical men objects, I should think, to vaccination; we are all but unanimous on the subject.

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4312. But as to whether disease may be communicated or not by vaccination, there is a difference of opinion. Would you advise the House of Commons to base its legislation upon that which was only a matter of opinion, and not an ascertained certain scientific fact?—They might do so with great certainty, because the mischief so very seldom happens, and as an honourable member of this Committee said the other day, we do not cease to perform the operation for stone, because we do not always succeed in the operation.

4313. Do you think we are safe in basing our legislation on the opinions of the profession?—Certainly.

4314. Notwithstanding all their variations?—But they are not many; they are very few.

4315. Does not the severity of the disease of small-pox depend in a large degree upon the susceptibility of the patient?—Yes, I suppose it does; there is some peculiarity which medical men cannot exactly find out; we cannot tell why one has it severely, and another mildly, even among the unvaccinated.

4316. Is there not a mild form of small-pox, which is very rarely fatal?—Certainly; that is a point which I have given in a table in "Reynolds' System of Medicine" a few years ago; the danger nearly always depends upon the amount of eruption upon the body. The unvaccinated who have confluent small-pox die at the rate of 50 per cent.; of semi-confluent small-pox the deaths among the unvaccinated are only 8 per cent. You see at once the great difference; the death-rate from distinct small-pox among the unvaccinated is only 4 per cent., and even those 4 per cent. die of convulsions, or some other disease to which children are liable.

4317. Are the mild and severe forms ushered in with symptoms equally severe?—They are generally much the same; some have it more mildly than others.

4318. Then that being so, are you justified in concluding that the modified cases of small-pox among the vaccinated are so modified in consequence of vaccination?—The vaccinated have very often very severe symptoms indeed at first, and we do not know until the fourth or fifth day whether the disease, the eruption on the skin, is going to be modified or whether it is not.

4319. Then may the greater or less intensity of the disease be independent of vaccination?—Yes.

4320. Either in the vaccinated or the unvaccinated according to its kind?—Yes.

4321. You distinguished the two kinds of small-pox as being mild and severe, and you called the mild form "benignant" small-pox, did you not?—Yes, there is a mild form where the pustules are not so fully developed as they are in the severe cases.

4322. I direct your attention to a statement in an article bearing your name in Mr. Simon's papers on vaccination, in 1857, on page 20: "Of the 945 unmodified cases there died 231, or 24 per cent., by which it will be observed that there is a difference of one-third in the mortality between these cases and the unprotected cases; therefore, although the eruption was not recorded in the register as modified or mitigated, the constitution must have received a protective influence as regards fatality to the amount of one-third, or else there would not have been this difference in the number of deaths;" you go on to say, "The

mortality would have been greater but for the disease having been influenced by vaccination;" is that assumption consistent with the fact of varying susceptibility?—Those were cases, I think, which had not any cicatrix to show; I assume that they were protected to that extent, or else they would have died at the same rate as the unvaccinated did.

4323. Is it not difficult to find the marks of previous vaccination in confluent small-pox, when patients are admitted into the hospital in an advanced stage of the disease?—Yes, in an advanced stage; but not in the early stage in the first two or three days.

4324. Then, when you fail to find the marks of previous vaccination, I suppose you would put them down among the unvaccinated?—I take their account of it. They tell me that they have been vaccinated, and I believe them, and I put them down as having been vaccinated, but having no cicatrix to show for it.

4325. What is the source from which you derive vaccine lymph; do you obtain it from the cow affected spontaneously, or do you obtain it by artificial inoculation?—I have two sources now in use; one obtained from the cow by inoculating the cow with the lymph of human small-pox, the other source being a cow which had the disease in the natural way, in the neighbourhood of Brussels, about two years ago.

4326. You inoculate the heifer with vaccine or small-pox lymph?—Yes, it was obtained by a friend of mine.

4327. It has been stated by Dr. Pearce, before this Committee, that Dr. Jenner distinguished between the protective matter and the unreliable matter, the former having its origin in the greasy horse, and the latter in cows spontaneously affected; have you any reason to doubt the accuracy of that theory?—I think, probably, that the horse's greasy heel had nothing to do with it. It was supposed that it was so at one time, but that I think is pretty well set aside now.

4328. Then Dr. Jenner was wrong?—Yes.

4329. In true cow-pox inoculation, is not erysipelas stated by Dr. Jenner to be a necessary accompaniment of the process?—He likened it to erysipelas. It is necessary to have the areola, as it is called, round the vaccinated spots, else the vaccine disease is not protective. Directly it arrives at the stage of areola it is protective; short of that a person may have small-pox.

4330. What are the arrangements for vaccination in Sweden and Denmark, of the vaccination in which countries you have spoken very highly?—I do not know; I was very anxious a few years ago that the exact information should be obtained, but I do not know that it was obtained.

4331. Did you recommend that similar arrangements to those now in force in Denmark and Sweden should be adopted here?—I did; I was very desirous of it, because I knew that the people there were well vaccinated in Sweden and Norway. I do not think they ever told us exactly what the arrangements were, but I suppose in country districts they must be much the same as in England. They must be as good, if not better, because I have frequently seen Swedish sailors, and they have been well vaccinated almost invariably, with seven good marks, about the size of fourpenny pieces, and the result is that they have very light small-pox.

4332. In

4332. In regard to the case recently investigated by Mr. Hutchinson, in which he states that nine people had syphilis communicated to them; if the facts are undoubtedly such as have

been set out, would that change your view as to syphilis being communicable by vaccination?—Not at all, because it must be of very rare occurrence indeed.

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Mr. WILLIAM JOB COLLINS, M.D., recalled; and further Examined.

4333. Mr. *Candlish*.] YOUR attention has been directed to an answer given to Question 3941 by Mr. Fry, has it not?—Yes.

4334. Mr. Fry states, "I know, through the medium of the correspondence of the office, a great many cases in which Dr. Collins gave certificates without seeing the children; I have reason to believe so from the statements which were made, but I do not know it otherwise;" is that statement of Mr. Fry's correct?—It is totally incorrect; I never gave a certificate for any one as to unfitness without first examining the child.

4335. Sir *D. Corrigan*.] You used, in your previous evidence, the phrase "public vaccinator;" what is a public vaccinator in England?—What I understand by a public vaccinator is a man who holds himself up to the public to perform the operation on certain days in the week.

4336. Is he paid?—Many medical men in London do it gratuitously.

4337. Is that your definition of a public vaccinator?—When I commenced the duties of public vaccinator those appointments were not in contemplation; I received an appointment before I was even qualified.

4338. By a public vaccinator, do you mean a man holding an official position?—Now, according to the law.

4339. You spoke of a public vaccinator in your evidence, and you said that you were a public vaccinator when you were an apprentice?—I performed the duties of a public vaccinator.

4340. Did you perform the duties of a public vaccinator for your master?—During my articles.

4341. What is the meaning of the words "public vaccinator" as applied to him; did he hold an official appointment?—There was no appointment made in those days.

4342. Did he hold an official appointment?—Not that I am aware of.

4343. *Chairman*.] Was he not appointed by the guardians of the parish in which he acted?—I am not aware of that; two days a week were set aside for vaccinating.

4344. In what year was that?—I commenced in 1838.

4345. Then do you mean that this gentleman under whom you acted had an office where vaccination was performed gratis twice a week?—It was performed gratis on Tuesdays and Fridays.

4346. Sir *D. Corrigan*.] Then, according to that, it was a self-assumed title?—I do not know that he assumed any title. We gave notice to the public in the neighbourhood.

4347. You called him a public vaccinator; was that a self-assumed title, or was it a title as applied to him conferred by any public body or authority?—I will leave you to draw your own inference upon that point; I only tell you the facts as they occur to me.

4348. Was that title given to him by any public authority entitled to give it?—I am not aware.

Mr.
W.J. Collins,
M.D.

Mr. ALEXANDER WOOD, M.D., called in; and Examined.

4349. Dr. *L. Playfair*.] ARE you a Physician in large practice at Edinburgh?—I am a Physician in practice at Edinburgh.

4350. Are you a Fellow of the Royal College of Physicians?—Yes.

4351. Have you ever been President of the Royal College of Physicians there?—I have been three times elected President of the College.

4352. Are you a member of the General Council of Medical Education established under the Act of 1858?—I am, and I have been so since 1858, when the council was established.

4353. Have you paid special attention to the subject of vaccination in Scotland?—I have.

4354. Are you the author of a pamphlet published in 1860, entitled "Small-Pox in Scotland as it was, is, and ought to be"?—Yes, I published a pamphlet with that title.

4355. What was the subject of that pamphlet, and what points did you bring forward in it?—The object of the pamphlet was to allay an unnecessary panic; to direct attention to the great want of vaccination in Scotland, and to endeavour to obtain some legislative measure to render vaccination compulsory in Scotland. That pamphlet was published in 1860, previous to the Scottish Vaccination Act.

4356. You then pointed out, did you not, that there was a large amount of small-pox still in Scotland, notwithstanding the previous attempts 0.37.

at vaccination?—Yes; the mortality from small-pox in Scotland was very much greater than the mortality from small-pox anywhere else in the United Kingdom. In Dundee the mortality was even greater than in London, which was supposed to be the place where small-pox was the most fatal.

4357. I think in that pamphlet you drew the following inferences: "First, that small-pox, though not steadily increasing year by year, fluctuates in frequency and fatality just as it did before the discovery of vaccination"?—I did.

4358. I think you also drew as an inference that it ravaged different towns, especially at different times, as in 1856 it ravaged the town of Dundee; and in 1857 the town of Glasgow; and that there were still epidemics coming over those larger towns in Scotland?—It is so stated in the pamphlet.

4359. You stated also in the pamphlet, did you not, that in 1856 in the chief towns in Scotland, with a population of 854,000, there were 645 deaths from small-pox?—Yes, that is in the pamphlet.

4360. You also stated in that pamphlet, did you not, that the total mortality in those towns from small-pox was 2.8 per cent. of the whole?—Yes.

4361. Was that larger or smaller than it was then in London?—That is double the average of I I

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Wood, M.D.

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2 May 1871. London for the preceding 10 years; that is to say, for the years from 1850 to 1860. It is double the average of England and Wales for the seven years preceding 1860, and it is fourteen-fold the average of Bohemia and Lombardy.

4362. So that up to that time small-pox was an important disease in Scotland, and produced considerable mortality?—Yes; there is, before 1860, scarcely one of the Reports of the Registrar General which does not allude to the prevalence of small-pox in one district or another of Scotland.

4363. In the case of Dundee, to which you referred, was there not a singularly large percentage of the total mortality due to small-pox?—Yes; I state that a large proportion of that mortality, that is to say, 229 deaths out of the 645 occurring in Scotland, occurred in the town of Dundee, where, in the single month of January, 95 persons died from small-pox; alluding to which, the Registrar General observes, “The deaths from this disease constituted not less than 30 per cent. of the total mortality; a mortality which has been exceeded by no single disease during the last 10 years, with the exception of the epidemic of typhus in the month of November 1847, and the fatal cholera epidemic of 1849, when the deaths from that disease during the months of July, August, and September, numbered respectively 209, 420, and 159.” The year when the small-pox was so prevalent in Dundee, was 1856.

4364. Do you agree with the statement of the Registrar General for Scotland that previous to the present Vaccination Act, a small-pox epidemic of greater or less severity took place about every three years in Scotland?—Yes; that is about the cycle, I think; but, perhaps, I should add to that, that they were not of uniform severity. Sometimes we had a slighter epidemic in the three years, and then after the next three years, there might be a very severe one.

4365. Was the small-pox in Scotland then confined to the eight principal towns, or was there evidence that throughout Scotland small-pox existed to a considerable extent?—The Committee are aware that the returns of the births, deaths, and marriages are only published for eight towns in Scotland, so that we have only published statistics of these; but in looking through the reports we find different registrars alluding to the prevalence of small-pox in the districts which are not reported upon. I find, for instance, that in the quarter ending September the 30th, 1859, no allusion is made to small-pox by the Registrar General in his report; but, from the Registrar's notes, we glean the following: “Fraserburgh. --- Small-pox has prevailed here during nearly the whole quarter. — Cockpen: Small-pox has been very prevalent during this quarter among the young; a considerable number of adults have also been attacked.” Then, I find that small-pox manifested itself in several districts round Perth, Dingwall, the Comrie Islands, Castletown, and so on; so that we find that it was very prevalent all over Scotland.

4366. Do you coincide with this passage from the Registrar General's report of December 1859 as explaining the prevalence of the mortality from small-pox. He says this: “Small-pox, which has assumed the epidemic form in Glasgow, Edinburgh, and Greenock, and is threatening to do the same at Aberdeen, caused 104 deaths, and this constituted 4½ per cent. of the mortality in the

eight towns. Most of the victims of that disease had never been vaccinated, and to this neglect the mortality is chiefly to be attributed?”—Yes; I think it was very distinctly brought out in all the investigations which we made that the neglect of vaccination was the great cause of the spread of small-pox in epidemic years. Perhaps, I may add to that, that since the Compulsory Vaccination Act there is a very decided diminution of small-pox; in fact, we have had no epidemic of small-pox in Scotland since the passing of the Vaccination Act on the 28th July 1863.

4367. In consequence of the prevalence of small-pox in Scotland, did not some of the medical bodies begin to move as to the necessity of getting a Compulsory Act?—In 1860, at the time when I published this pamphlet, the College of Physicians appointed a committee to consider the question of a Compulsory Vaccination Act, and they drew up a report, which was transmitted to the Lord Advocate, but it had no effect. But in 1863, the year in which the Act passed, the town council (the municipal body which governs Edinburgh) was so alarmed on account of the prevalence of small-pox, that they called a meeting attended by delegates from their own body, by the presidents of the College of Physicians and College of Surgeons, and by the managers of the three parochial boards, into which Edinburgh is divided. The result of that consultation was that the town clerk and the officer of health were requested to prepare memoranda, or the heads of a Bill for approval by the various parties interested, and those heads were afterwards sent to the Lord Advocate, and were the foundation of the Bill which passed that year.

4368. I think that the Bill which was passed was not in conformity with the English Bill, was it?—The Bill as originally introduced by the Lord Advocate was almost an exact copy of Lord Lyttleton's Act, but it created a great deal of opposition, chiefly from the medical men, who called a very influential meeting, of which I have a report by me. The College of Physicians took it up, and I was sent up to London along with Dr. Burt to see the Lord Advocate upon the subject. We did not succeed in getting his Lordship at first to adopt our views, but we waited afterwards upon Sir George Grey, who was then Home Secretary, and he was so impressed with the suggestions made at an interview at which the Lord Advocate was present, that the end of it was that, to a certain extent, effect was given to the views which were laid before his Lordship, in the name of the College of Physicians, by myself and the late Dr. Burt.

4369. Will you state briefly the chief differences between the English Vaccination Act of 1853 and the Scotch Vaccination Act of 1863, and the grounds of objection to points in the English Act?—The first point to which we took exception was, the appointment of special vaccinators. We felt that it would be unfair to the medical profession to presume that any properly educated medical man was not capable of performing the operation of vaccination.

4370. In coming to that conclusion, were you influenced by the fact that considerable attention is given to teaching proper vaccination at all the medical schools in Scotland?—I do not think that any aspirant for medical graduation would be allowed to pass who did not thoroughly understand both scientifically, theoretically, and practically

tically the operation of vaccination; but we felt that if a man was incompetent to perform the operation of vaccination, *a fortiori*, he would be incompetent to perform a hundred other operations, such as passing a catheter, which is a much more difficult thing to do than vaccinating a child.

4371. Did you object to the establishment of vaccine stations?—We objected very strongly to the establishment of vaccine stations. We had some experience of them. The Board of Supervision (which perhaps the Committee understand is in Scotland equivalent to the Poor Law Board here, and which takes charge of the whole of the Poor Law matters) had issued an order compelling the parochial medical men to establish vaccine stations, and attendance at these had been found a great hardship by medical men. One of the statements made at the meeting of the medical profession to which I have alluded, by a country medical man, will put you in possession of the objection in better language than I could do it in. Mr. Craig, a well-known practitioner, who has now retired, but who was one of our best country doctors, residing at the village of Ratho, about eight miles west of Edinburgh, said “He had only one or two facts to state in connection with this resolution, which he supposed were utterly unknown to the community generally, and more particularly to certain members of Parliament, showing the effects of such legislation as applicable to country parishes. He knew a medical practitioner who could not move from his door two miles within the Parliamentary bounds without paying two tolls. Including a second visit to see whether the vaccination was perfect or not, it would require him to go eight miles and to pay four tolls, and all for 1 s. 6 d. He could neither move that distance eastward nor westward, without being at a considerable expense in this way. A common cabman would not drive a person two miles, and a street porter would not go the same distance for the paltry sum to be offered to a medical gentleman for performing an important service.” That is more upon the 1 s. 6 d. fee than upon the vaccination stations. But Dr. Strachan, another very eminent country practitioner, a classical scholar, and a man of great intellectual culture, who has published some valuable treatises, said: “He was a parochial surgeon at Glendevon, where there was an average of three children born in each year. According to the regulations of the Board of Supervision, he was required to go four times in the year, in order to attend to the vaccination of the children. The travelling, every time he made the journey, cost him 1 s. 6 d. for tolls. He went at first; but latterly, looking upon it as unnecessary, he discontinued it. If he had continued to go, he would have had to travel four times 16 miles every year, and to pay 1 s. 6 d. each journey; while there might have been no children present for vaccination, the parents applying, as usual, to their regular practitioner. If, however, the present Bill were to pass, Glendevon School House would in all probability be one of the places appointed for vaccination. The state of matters he had first referred to would be continued, and the only remuneration would be 1 s. 6 d., which would be got only once in half a dozen years.” Before quitting this subject I should like to read to you the statement of the Board of Supervision themselves, which I take from their Report of 1863, the year when the

Vaccination Act passed. I think it is of some importance in regard to this question of the districts. They say in the Eighteenth Annual Report of the Board of Supervision for the Relief of the Poor of Scotland: “By the rules of the board as to medical relief to the poor in parishes which participate in the Parliamentary Grant in aid of medical relief, it is provided that the medical officer of each such parish, or district of a parish, shall at all times be furnished with vaccine virus, and vaccinate, without taking a fee or other remuneration than his salary from the parish, at stated times and places to be named by the parochial board, and approved by the Board of Supervision, all persons who may come or may be brought to him for that purpose. Accordingly since 1848, when those rules were issued, they have been carried out in participating parishes; but in many of those the attendance, at the stated times and places of persons to be vaccinated, has been irregular and precarious. In 1861 we called for returns of the number of persons vaccinated by the parochial medical officers, and in 1862 for similar returns, distinguishing the number of persons vaccinated at the stated times and places from that of the persons vaccinated at other times and places. From those Returns, abstracts of which are printed in the Appendix, it appears that in 1861 the total number of persons vaccinated in the participating parishes was equal to only 0·73 per cent. of the population, while the births in those parishes appear from the Registrar General’s Returns to be about 3·49 per cent. The vaccinations returned by the medical officer were thus in the proportion of 1 to 4·84 births. In 1862 the vaccinations were only 0·65 per cent. of the population, and 1 to 5·40 births. Many persons were no doubt vaccinated, more especially in town parishes, by other practitioners than the parochial medical officer; but making every allowance for this, it is obvious that the proportion of children who remained unvaccinated must have been very large. Those returns will afford imperfect, no doubt, but still interesting means of comparing the state of vaccination as it has been with that which may result from the Vaccination Act of the 28th ultimo.”

4372. Now will you turn to the 18th clause of the Vaccination Act of 1863, and will you explain what is the difference between the English and Scotch Acts, where in England the parent is to take the child to the station, and where in Scotland the vaccinator goes to the house of the child?—The whole difference may be most simply explained in this way; that we held in Scotland that it was enough that the parent should produce a certificate of vaccination from a registered medical practitioner. We therefore threw upon the parent the onus of obtaining that certificate. The parent, therefore, sought out either the medical attendant who had brought the child into the world, or any other who was most convenient for her (for generally it was the mother) and either took the child as agreed upon between them to the operator’s house, or he came to the child’s home and performed the vaccination; but all that the law took care of was that the certificate of vaccination should be produced. Then the Poor Law Board issued their own regulation in regard to the vaccination of the children of paupers. The Act did not interfere at all with that.

4373. Supposing that the Poor Law Board found that certain children were not vaccinated, what

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what course did they take under the 18th clause?—On looking into the operation of the Vaccination Act in England, and on collecting all the information I could from various quarters in regard to it, I found that if a parent neglected to vaccinate his child within a given time he was liable to be proceeded against before a magistrate by fine and imprisonment; but I found that there was a great unwillingness on the part of a magistrate to send the poor man to prison, interrupting his work, stopping his wages, and begging his family, merely because he had neglected or even refused to have his child vaccinated; so I took the liberty of suggesting to the Lord Advocate that it would be a better plan, if a parent neglected the vaccination of his child, that the magistrate should issue an order that the vaccinator of the parish should go and vaccinate that child in his own home, and that if the parent refused to allow the vaccinator to operate, it would then be time enough to bring him up as a criminal, and fine or imprison him for deforcing the medical officer in the discharge of his duty. That suggestion was adopted, and that is the action now taken in Scotland. I have the tables here, if the Committee wish to see them, of the number of cases in the two last years in which that part of the Act has been put in operation.

4374. Then are the Committee to understand that this is the practice in Scotland: that if a certificate of vaccination is not sent in to the registrar of the district, an intimation is sent to the parent that the public vaccinator will call at the house of the parent to vaccinate the child, and that having offered vaccination, the penalty only then comes into operation, because there has been a refusal of the public vaccination which has been offered in the house?—Precisely. There is a blank form of certificate given by the registrar at the birth of each child, when the birth is registered, and the parent is told that he must return that within six months after the birth. If he neglects to return it he gets a note from the registrar of the district reminding him that he has neglected this duty. If he still neglects, he is reported to the parochial board of the district where he resides, and the parochial board issue an order in writing that their medical officer shall go and vaccinate that child. If any obstruction is offered to the medical officer, the parent is then dealt with criminally, but not until then.

4375. Is the registration of births compulsory in Scotland?—It is.

4376. Is it compulsory in England?—It is not.

4377. Does not that constitute a great difference of power in this respect between Scotland and England?—An immense difference.

4378. In the English Act the parent has to take the child when it is not vaccinated to the vaccination station; do you not think that the great difference between the two Acts, the public vaccinator going to the house of the parent under the Scotch Act, and the parent having perhaps to go to a distant station under the English Act, may, to a considerable extent, account for the easy working of the Scotch Act, as compared with that of the English Act?—The parents objected very much to the station vaccination. It may be an inclement day; the distance may be very great; or the mother may be weak or in employment. The doctors also objected to it; and both parties objecting, they find it much easier that the doctor should go to the house. In

fact, I believe that vaccination at stations, except at the dispensaries in our larger towns, is pretty nearly abandoned in Scotland.

4379. Is it, or is it not, the fact, that there is much irritation of the population against the Vaccination Act in Scotland?—Scarcely any. The class of people who call themselves vegetarians have placarded large bills: "Horrors of Vaccinations!" and tried to get up a clamour in Scotland against it. I saw a poster about three feet long hanging out at a door in Edinburgh, with large letters: "£.10,000 claimed annually by the Doctors! Horrors of Vaccination!! Incalculable amount of Death!!!" and things of that kind; but it has scarcely the slightest effect upon the Scotch population.

4380. In the year 1869 how many prosecutions for penalties took place under the 25th clause of the Scotch Act?—The total population of Scotland in 1861, which was the last census except the one which has just been taken, was 3,062,294. In 1868 the number of defaulters under the 18th section of the Act, reported by the Registrars, was 4,607. The number of persons who were vaccinated in terms of the 18th section, that is, by vaccinators being sent to them, was 1,157. The number of prosecutions for penalties under the 25th section of the Act was nine; and the number of such prosecutions in which penalties were adjudged was five.

4381. So that in 1868 there were only five cases of penalty?—In the year 1868 there were only five cases in which penalties were recovered.

4382. Mr. Cave.] Is that for the whole of Scotland?—That is for the whole of Scotland.

4383. Dr. L. Playfair.] Were any persons sent to prison under that clause, or did they pay the fines?—I cannot tell you that, but I should think probably they did pay a fine; it is "penalties adjudged." In Haddington there was one; in Inverness there were two; in Lanark there was one, and in Renfrew there was one. According to the report published in 1870, for the year ending 30th of June 1870, there were 4,098 defaulters under the 18th section of the Act; there were 1,047 persons vaccinated in terms of the 18th section; there were 15 prosecuted for penalties, but the prosecutions do not seem to have succeeded in any instance, for there were none in which penalties were adjudged. Of those 15 it is a curious fact that one was in Elgin and 14 in Inverness.

4384. Lord R. Montagu.] How do you account for the difference between the 4,607 defaulters and the 1,157 vaccinated under the 18th section?—The difference, I take it, is this, that a number of those defaulters would go to their own medical men to be vaccinated, the others being vaccinated by the parish medical men; it is always left optional after the notice is given, I think for three days, and if the parent does not then satisfy the parochial authorities that the child has been vaccinated, it is vaccinated under the section. That, I think, explains the difference.

4385. Dr. L. Playfair.] Is it not the case that considerable attention is paid to the feelings of the parents; for instance, when the notice is sent to them 1 s. is charged for that notice, and they are told that they are subject to certain other expenses, I think, which amount to 2 s. or 3 s., but are not those scarcely ever brought up against them if they obey the law?—I believe so; there

is much more deference to the feelings of the parents and of the medical men in the Scotch Act than in the English Act.

4386. Do you know any case of a second penalty having been exacted under the Scotch Act?—I do not.

4387. Is not the clause in the Scotch Act much more distinctive in power for a second penalty, than the clause in the English Act?—I think so. It is not nearly any such a hardship to a parent to be fined for resisting vaccination, as to be fined for the neglect of it.

4388. What is the experience in Scotland as to the necessity of insisting upon arm-to-arm vaccination?—The only use of insisting upon arm-to-arm vaccination is for keeping up the supply of lymph. I think that, preserved in the capillary tubes, we get it quite as good for vaccination purposes as when it is taken direct from the arm. It is quite fluid. The arm-to-arm vaccination is certainly of use for keeping up the supply, but we have no difficulty whatever in regard to that. When I had a good deal to do with that kind of practice, I always kept up an arm-to-arm supply in my own house without the least difficulty; and I know that most practitioners in that kind of practice do so.

4389. Can you state whether the operation of the Act of 1863 has largely diminished the amount of epidemic small-pox in Scotland?—Very largely. Both the Registrar, in his Reports, and the Board of Supervision have testified to the extreme value of the Scotch Act.

4390. Before the Act was passed, was the mortality in Scotland from small-pox about 1,000 a year upon an average?—I think I have it stated in my pamphlet, to which reference has been made. Perhaps, I may read this passage: “Whether rightly or wrongly, an impression prevails among the public that small-pox is steadily on the increase; that the protective power of vaccination has diminished; and that we are rapidly drifting back into that state in which the close of last century found us, when the annual ravages of small-pox in Europe alone have been estimated at half a million of lives. It were not difficult to show that there is no foundation for any such dread; that there is no reason to believe that the protection afforded by vaccination has diminished; or that small-pox has increased to such an extent as to give the least occasion for any fear that it will regain its former fearful power. At the same time, there is abundant evidence to show that by our criminal apathy and carelessness, valuable lives are being continually sacrificed; long and tedious sickness, and often death itself, introduced into families; deteriorated constitutions rendered a permanent affliction to the survivors, and an unhealthy offspring entailed on posterity; and this to an extent which by a little vigilance and care could easily be prevented.” Then I give a table of the mortality in the eight principal towns in Scotland from small-pox during the preceding five years, the total being 1,993 in the eight principal towns alone for the five years preceding the year 1860. I then give a table comparing the deaths from small-pox with those from scarlet fever, whooping-cough, and measles, in Edinburgh, Glasgow, Aberdeen, and Dundee in one year, 1856. Then I show the periods of life at which the small-pox is most fatal.

4391. Can you tell us now what has been the annual mortality from small-pox in Scotland for 0.37.

the last three years?—The following table from the Supplement to the Returns of the Births, Deaths and Marriages for 1869, gives it from 1855 to 1870:—

Years.	Small-pox Deaths.	Years.	Small-pox Deaths.
1855 - -	1,309	1863 - -	1,646
1856 - -	1,306	1864 - -	1,741
1857 - -	845	1865 - -	383
1858 - -	332	1866 - -	200
1859 - -	682	1867 - -	100
1860 - -	1,495	1868 - -	15
1861 - -	766	1869 - -	100
1862 - -	426	1870 - -	150

4392. Is it within your recollection that in one year the small-pox mortality in Scotland fell to 20 deaths?—I believe that in 1868 it fell to 15.

4393. Mr. *Candlish*.] Have you both cases and deaths?—No.

4394. Dr. *L. Playfair*.] Has the present epidemic been very severely felt in Scotland?—We have not seen any of it in Edinburgh at all.

4395. You know Dr. Gairdner, I suppose?—Yes; Dr. Gairdner is the Professor of Medicine in the University of Glasgow, and Medical Officer of Health for Glasgow; a very eminent medical man.

4396. Speaking of the house-to-house visitation in order to promote vaccination amongst the poor at present in Glasgow, he says that the work of the vaccination stations continues to be conducted with energy, 712 individuals having been examined, and 126 vaccinated; and he ascribes to that house-to-house visitation what he states “to be the prevention” [of small-pox] “from assuming the proportions of the London and Liverpool epidemics;” is it not the case that there has been very little epidemic in Glasgow, though it is a very unhealthy town?—Very little indeed; just before I left Edinburgh the authorities applied to the association for visiting the poor from house to house, of which I am chairman, to get our visitors to take some charge of urging the unvaccinated to get vaccinated, and I was very much surprised to find that there is still a very large number of unvaccinated, of course of an age that did not come under the operation of the Act of 1863. Among my own patients I have found several servants, especially from the Highlands, who had never been vaccinated at all, and I have had them vaccinated.

4397. Dr. Gairdner, in speaking of the present state of Glasgow, says this: “Since last report we are not in possession of the whole facts as regards the deaths from small-pox in private practice; but, from inquiries made, there is reason to presume that by far the greater number, if not the whole of them, had been in unvaccinated persons;” is Dr. Gairdner likely to make such a statement with care?—I should say that he is one of our most reliable medical men as regards facts.

4398. *Chairman*.] Are you able to state under what clauses of the Scotch Vaccination Act those penalties to which you have referred have been

Mr. A. Wood, M.D. inflicted?—I think they are all under the 25th section of the Act.

2 May 1871. 4399. Have you any statistics with reference to the number of persons in Scotland who are unvaccinated?—Yes, there are very few; in fact, I understand from those in authority that there would not be an unvaccinated child in Scotland if we had some means of overtaking the migratory population. The railway navvies and tramps, and children born by the roadside and under hedges are often not registered; but if we could register all the children in Scotland, if we could follow them when they moved from registration district to registration district, every child would be vaccinated. It is only in the migratory population, I believe, where you find any unvaccinated children now.

4400. Have you anything to show what proportion of the number of children born in each year are vaccinated?—It is given in the tables which I submit. (*Vide Appendix.*)

4401. Do you know whether there is any feeling at all in Scotland in favour of any alteration of the Scotch Act?—I saw that the Lord Advocate had introduced a Bill the other night on the subject, and I had several letters the next day from Scotland, hoping there would be no alteration of the Scotch Act, and entreating me to see what the Bill was. I have not been able to do so. I have received a letter on the subject from the Government official in Scotland, Dr. Husband, who has charge of keeping up the supply of lymph for us.

4402. Do the Privy Council give anything to Scotland out of the public grant for successful vaccinations?—Yes. One of the objections which we took to the Act of 1863 was, that no provision was made for supplying us with vaccine lymph. We were then told that the Privy Council would arrange that; and the College of Physicians accordingly memorialised the Privy Council, and they now have appointed Dr. Husband to the office (I forget what it is called). He is bound to supply lymph to all registered medical practitioners throughout Scotland on application; and I believe the demand for lymph at present is enormous on account of the re-vaccination, from which there is no return; you cannot get back the lymph from it, and yet Dr. Husband is perfectly able to keep us all supplied with lymph.

4403. My question had reference more to the extra payment given out of the Government Grant in England and Wales; is a similar payment made in Scotland?—There is an extra payment given by the Government to the doctors attending the poor, and I rather think that the offices of vaccinator and of poor law doctor are merged together, but I am not able to speak upon that point with any knowledge.

4404. Lord R. Montagu.] You stated, did you not, that in Scotland there is required merely a certificate that the child has been vaccinated?—There are three forms of certificates: The first is, that the child has been successfully vaccinated by A. B., a registered medical practitioner. The second certificate is, that the child is insusceptible; the schedule is, “I, the undersigned, hereby certify that _____, the child of _____, aged _____, of the parish of _____, in the county of _____, has been successfully vaccinated by me. Dated this _____ day of _____ (signed) A. B., (Surgeon of the parish or combination) (or other medical practitioner, as the case

may be).” Or, this certificate, “I, the undersigned, hereby certify that I am of opinion that _____, the child of _____, of the parish of _____, in the county of _____, aged _____, is not now in a fit and proper state to be successfully vaccinated, and I do hereby postpone the vaccination until the _____ day of _____. Dated this _____ of _____;” and so on. Then the third certificate: “I, the undersigned, hereby certify, that I am of opinion that _____, the child of _____, of the parish of _____, in the county of _____, is insusceptible of the vaccine disease. Dated this _____ day of _____.”

4405-6. The certificate must be signed by a duly qualified medical practitioner, I suppose?—Yes, it must.

4407. If the certificate is signed by a doctor that has not been duly qualified, of course it will stand for nothing?—It would stand for nothing.

4408. Is the qualification in Scotland similar to that which is required under the 4th clause of the English Act?—I think I mentioned before that we have no public vaccinators in Scotland. The medical profession got their appointment stopped; but any man who is in the register of medical practitioners, published by the authority of the Medical Act of 1858, is entitled to sign a certificate of vaccination.

4409. Then that is the qualification?—That is the qualification.

4410. You say that in Scotland the registration of births is compulsory, and that a form of certificate is sent by the registrar to the parent; I suppose it would be impossible to ensure the vaccination of all children, unless the registration of births were compulsory?—Of course the registration of births gives great facilities. I do not see how the Scotch system could be carried out through the registrars at any rate, in a country where registration of births was not compulsory.

4411. And it would be an imperfection in the English Act, I suppose, unless the registration of births were made compulsory?—Yes.

4412. You spoke of stational vaccination, and you said that that did not exist in Scotland; would not arm-to-arm vaccination be very difficult unless you had the vaccinations at the different stations?—I never in my own experience found any difficulty in arm-to-arm vaccination by a little arrangement.

4413. But supposing that there were a number of poor children who wanted to be vaccinated, how would you be able to vaccinate them from the arms of other children unless you made all the children meet together at one spot?—I myself used to have one day in the week (say Friday, at two o'clock), when I vaccinated all who chose to come to my house; but I always took care to arrange that some child whom I had vaccinated on the previous Friday was there, so that I should have a supply of the virus; and, if I had a great many in one day I said, “Now, I may have fewer next Friday; two or three of you go away, and come next Friday,” and I never had the least difficulty.

4414. Then, in fact, you made your own house a station, and the only difference was that it was not compulsory by law upon the parent to come, but that you persuaded the parent to come?—Yes, only I was not compelled to attend at a distant place, whether children were there to be vaccinated or not. I did not find any difficulty as regards

regards the children of the higher classes, if they were in good health; but in case of the child being delicate, or the mother having any objection, I would sometimes ask the mother of the lower class child to come to the house of this person, and vaccinate the child there.

4415. But a station, either large or small, either compulsorily or voluntary, there must be, if you are to have arm-to-arm vaccination, I suppose?—You must of course have the child from whom the matter is to be taken, to meet the child into whom it is to be inserted; but I do not think you quite take up the idea of what I mean by a station. It is that a doctor shall be compelled to attend at a schoolhouse, or some such place, in a village, at certain set times, when possibly there may be no children to meet him. If you leave it to the doctor to make his arrangement, the value of arm-to-arm vaccination will lead him, if he has sufficient population, to make arrangements for that purpose much more effectual than any compulsory arrangements by law would be.

4416. And you consider that that would be an improvement in the English Act?—It operates well in Scotland, and I believe you have great difficulty in England about it.

4417. You mentioned also, vaccinating with lymph contained in tubes; you must of course be uncertain, if you do that, whether the lymph contained in the tube comes from a healthy child or an unhealthy child?—To this extent, that I do not think any medical man would put virus not of good quality into those tubes, knowing that they were to be reserved for use; and he would have no temptation to do it, because there is quite an abundant supply of good lymph.

4418. Then it is not at all likely that the lymph in the tubes would be unhealthy, but you cannot be quite certain about it?—You cannot be perfectly certain.

4419. You prefer arm-to-arm vaccination, if it be possible?—Now that we have the capillary tubes, I have given it up; I find that the capillary tubes preserve the lymph very well, and save a great deal of trouble. We had an invention before that which kept the lymph liquid for a considerable time. It was a bottle with a prolonged stopper, and you put the lymph on the stopper in the bottle, and it would keep two or three days. I do not like using dry lymph re-dissolved, and still less using the crust of old vesicles, and if you can keep the lymph perfectly fluid for years, I do not see the least object in using lymph so preserved.

4420. Does every doctor fill the tubes for himself, or do you buy them?—The official appointed by the Privy Council is bound to supply us with them; but we generally, if we have a successful vaccination, take off a few tubes for ourselves, and keep them, if the vesicle is one which we like.

4421. Mr. Cave.] How long do you say the lymph would keep?—It would keep for ever in those capillary tubes where the air has no admission to it. It is like the food in sealed canisters. We have no number of years in which it seems to have exhausted itself, where the air is preserved from access to it.

4422. If air does get access to it, I suppose it gets bad directly?—It dries up.

4423. How long will the dry lymph keep when exposed to the air?—I do not know that. It would give out an offensive smell when it began to putrefy. I never saw it do that when kept in 0.37.

the capillary tubes, but I have when kept in the bottle which I have described.

4424. In that state it would not be fit for use, would it?—I would never use it in that case.

4425. Do you know the cause of the number of defaulters as to vaccination from Inverness?—No, I do not.

4426. Do you know whether there is any feeling against vaccination in Inverness?—I do not know at all. In fact, until I was in this room, I did not notice that there were so many of those cases from Inverness.

4427. The parish is generally the unit in Scotland, is it not, for carrying out all this legislation?—No; the Registration Act is carried out by a distinct body from the parochial board.

4428. Is it a union or a district?—The whole of Scotland is divided into registration districts, perfectly distinct from the districts for the relief of the poor.

4429. Are they conterminous with parishes in any case?—Not necessarily in any case.

4430. Mr. Candlish.] Is there anything in the registrar's report from which you have quoted, to show what happened to the children of those persons who were prosecuted?—There is nothing in the report to show that.

4431. Can you tell whether the children were ultimately vaccinated or not?—I cannot say; there is nothing in the reports to indicate it.

4432. You cannot tell whether they obeyed the law or not ultimately?—I should think if they did otherwise they would have been prosecuted again, and there is no table showing that there was any second prosecution; but I have no knowledge whatever of it.

4433. Do you know whether that was because the law was feeble in that respect, and did not provide for a second prosecution, or that the parent had the child vaccinated?—I do not know; but I should think in all cases they would be vaccinated, because I have never had my attention called to any case where the parent really objected to vaccination. I do not think, so far as I know, that that was put in as the defence of the case.

4434. Has any case come under your own eye in which there was a prosecution and a fine, there being an honest objection to vaccination?—I think, if that had been the plea, it would not have escaped my notice; it would have been reported in the newspapers, and such a thing would have attracted my attention at once.

4435. But how do you understand that punishment to have been inflicted, unless there has been continued disobedience?—Simply from perversity.

4436. Whether they obeyed or not, you do not know?—I do not.

4437. You say that the law admits of any number of penalties for neglecting the vaccination of the same child; do you only know that from your own construction of the law?—I am not a lawyer.

4438. You do not know any cases of second prosecutions of the same child?—There is nothing given in this table about second prosecutions.

4439. And you have not heard of any?—No.

4440. So far as you know, may one prosecution, and one conviction, with respect to the same child, relieve the person from obedience to the law?—I do not know that; I am not a lawyer, and I cannot interpret the statute.

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4441. Has

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Mr. A. 4441. Has it come under your observation as a matter of fact?—It is a matter of interpretation of the statute.

Wood, M.D. 4442. You stated, did you not, that you take the lymph from the arm of the child vaccinated on the seventh day?—Yes.

2 May 1871. 4443. Is it not the regular practice to take it on the eighth day?—I think it is more convenient to take it on the seventh, but I do not think it matters very much.

4444. It might be as convenient to take it on the ninth or the tenth day, I presume?—Then you lose the weekly recurrence; but I do not think it would be as active on the ninth or the tenth day, and besides that, you would not get such a good supply.

4445. You have spoken of not liking to use the crusts of vesicles; are they sometimes used?—Not now, I think.

4446. May they contain disease?—I cannot tell; I never saw them produce any bad effect, but I think they are more liable to become putrid, and I would not like to introduce putrid matter into any living body.

4447. The crusts of vesicles are not the lymph itself, are they?—No; I do not think that the lymph, as I have stated before, would become putrid if it were properly kept and excluded from the air.

4448. Can you always detect by sight any impurity in the lymph?—Certainly not.

4449. You have given from the table the numbers of cases unsuccessfully vaccinated, in proportion to the population; but you hardly regard it as credible, do you, that every child should be vaccinated, except a proportion of .05 per cent. of the entire number?—I think it is probably correct, if it is so stated by the Board of Supervision.

4450. You think, in point of fact, that upwards of 99 out of every 100 children in Scotland are vaccinated?—I can best answer that question by directing attention to the Registrar General's Supplementary Report for 1869. (*Vide Appendix.*)

4451. Dr. Brewer.] Have you ever seen any vaccination taken directly from the vesicle of a heifer?—I have.

4452. Do you think that that vaccination, when transferred to a child, is as steady in the production of good results as arm-to-arm vaccination?—I have only twice seen vaccination direct from the heifer to the child, and in both those cases I saw no difference in appearance between that vesicle and one from arm-to-arm vaccination.

4453. Was the fever of the child at all more marked?—Not at all.

4454. Was the arm more severely inflamed?—No; there was no perceptible difference.

4455. Do you consider vaccination, as a rule, in Scotland harmless?—I never saw it do any harm, except that sometimes it produces a slight erysipelatous irritation about the part.

4456. Have you any reason to believe that any constitutional disease from the child from whom the vaccine matter is taken is transmitted to the second child?—I have met with no cases in my experience that would bear out that, and all my idea of disease is against it, reasoning from analogy.

4457. Have you ever seen scrofula or consumption that you could trace distinctly to the influence of vaccination?—Never.

4458. Do you consider that scrofula and consumption are more common and rife now than

they were previously to the introduction of vaccination?—I did not practise, of course, previous to the introduction of vaccination, and therefore I cannot speak from my own knowledge, but I should not think so.

4459. Do you conceive that vaccination protects those who are the recipients of vaccination from an attack of small-pox?—I do not think that a vaccinated person is positively exempted from small-pox, because I think vaccination only gives to the person vaccinated the same protection that a previous attack of small-pox would give. It is, in fact, giving the disease in a milder form, and we know that as a general law a person who has once had the small-pox is exempt from future attacks; but the very worst case of small-pox that I ever attended was in a person to whom I said the first day I ever saw her, "If you were not so deeply pitted with the small-pox I would say that you were going to have small-pox." That person had been vaccinated, had had small-pox, was deeply pitted, and died of the most virulent form of the disease. Therefore vaccination can give no more protection than small-pox itself can give; but there is one very striking thing which is perhaps not sufficiently attended to. When the practice of inoculation was prevalent, we had much more frequent epidemics of small-pox than we have under vaccination. The epidemics under inoculation were constant; the epidemics under vaccination only occur once in three or five years.

4460. Is the early stage of premonitory fever lessened by vaccination in the case of those who, having been vaccinated, may happen to take small-pox?—The disease generally is modified in its character in the vaccinated.

4461. Is it in the eruptive stage less violent?—Yes, much less violent.

4462. Is the eruption itself much less painful?—Much less painful.

4463. Is the convalescent stage milder?—The whole of the disease is usually reduced in every way in its violence.

4464. Are the results of small-pox upon the constitution of a person unprotected by vaccination more severe and more serious than they are upon the constitution of a person who has been protected by vaccination?—Yes; in the case of ophthalmia, for instance, we know that formerly a large number of the inmates of our blind asylums were the victims of small-pox; and we know that there is now scarcely such a thing as blindness following small-pox in a vaccinated person.

4465. And that you attribute entirely to vaccination?—Yes; that I attribute entirely to vaccination.

4466. Sir D. Corrigan.] We have heard of the panic with regard to small-pox in London, Edinburgh, and various places; but probably in London alone many thousands of young men have had themselves vaccinated or re-vaccinated within a very recent period?—Yes.

4467. If one of those young men now presented himself before you with acute gonorrhœa or chancre, and said he had not got it from a woman but that it arose from his having himself vaccinated, would you believe him?—I would say this: that for the purpose of not inducing people to tell falsehoods I never listen to the alleged causes of either gonorrhœa or syphilis in patients who present themselves to me. I never knew a patient yet, who got gonorrhœa or syphilis from a woman by his own story, except one; but almost every patient who comes to be cured of any form of syphilitic disease, alleges that he got it

it in a dirty watercloset, or by a woman rubbing up against him in the street, or some cause of that kind, and therefore I should be extremely sorry to believe any story of syphilitic disease arising from vaccination. I would say the same with regard to scrofulous disease; I never yet had a child brought to me by its mother, with an enlarged gland in its neck, or an enlarged knee-joint, where the mother did not find some material cause for it; that the child had suddenly turned its head round, or had twisted its knee. In the same way, if those diseases show themselves soon after vaccination they are ascribed to vaccination. But it is not vaccination alone; there is a tendency in the human mind, and especially in the imperfectly educated human mind, to assign a material cause for everything, and therefore vaccination is often unjustly seized upon as the material cause of some of those things.

4468. There are two modes of vaccination practised; the one is by puncture, and the other is by what we call scratches; is it not a general rule that a punctured wound is a more dangerous wound than many other wounds; for instance, than a wound by a scratch?—You assume in your question what I should scarcely be prepared to concede to you. You assume, that when vaccination is performed by what you are pleased to call a puncture, there is a punctured wound inflicted; my idea of a punctured wound is a deep narrow wound penetrating to some distance; the punctured wound of vaccination is the mere insertion of the point of a sharp instrument under the cuticle, not perpendicularly, but horizontally, and therefore it does not fall under that category.

4469. Would you, if you were giving directions as presiding over vaccination, leave it to the discretion of the medical officer to use which mode of vaccination he preferred, or would you recommend one mode in preference to the other?—I think a great deal should be left to the discretion of the medical man. Some years ago there came down from London to Edinburgh a gentleman, sent, I believe, by the Privy Council, and he was to show us the most approved method of vaccinating. He was taken to the Royal Dispensary in Edinburgh, and two or three children were brought in. He took out a formidable looking instrument (resembling a good deal what the Honourable Member knows as a Valentine knife, though smaller), a double-bladed knife, and he gave the child three or four gashes in each arm. The mother ran screaming out of the room, and declared that if she had known that the child would be so used she would never have submitted it to the operation. I believe that if you enjoined vaccination to be performed in that mode, you would very soon have no children submitted to it. In Edinburgh we have a very neat instrument, which was invented by a medical man there. It is a small ivory handle, enclosing three or four fine needle-points, which just project a short distance beyond the handle, and we all use that now. We draw it across the arm, and then across again, perhaps from our love of the tartan pattern, for it makes quite a tartan pattern. Then we blow upon a little silver blade at the other end the matter from the tube, and pass the blade over the part of the arm to which the points have been applied. It is the simplest thing, and I have done it repeatedly to children who have never cried at all in the operation; but if you gash the children's arms, they will roar,

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and the parents will be alarmed, and you will find great difficulty in inducing parents to submit their children to the operation.

4470. The instrument used in Scotland is so applied as to make the sign of a cross on the arm?—Transversely.

4471. Mr. *Taylor*.] You stated broadly, did you not, that the amount of small-pox mortality in Scotland in the last few years has very markedly diminished, as the result, you believe, of a more perfect system of vaccination, resulting from the putting into operation of the Act of 1863?—Yes.

4472. And you prove, as you conceive, the advantage which the working of that Act has produced, by the fact of there having been a much smaller mortality since?—Yes.

4473. It is upon that general reference to figures that you base your conclusion, is it not?—Yes.

4474. If, therefore, in a year or two, another epidemic should break out in Scotland causing great mortality, your conclusions would be somewhat modified, I presume?—Yes; I would give that answer, however, with this explanation, that you must always remember that a large proportion of the population in Scotland were born before 1863, and that therefore the Vaccination Act has by no means secured the vaccination of the entire population. I have been very much surprised within the last few weeks in carrying out vaccination, to find a number of adults who had never been vaccinated at all; I could not have believed that there were so many.

4475. So far, therefore, the reference to figures is not satisfactory; if a new epidemic would not cause you much surprise on account of the number that were not vaccinated, the freedom from small-pox now can hardly be logically deduced from the prevalence of vaccination, can it?—I should be very much surprised if there was any great mortality of children under 10 years of age if an epidemic broke out.

4476. You stated that a small-pox epidemic had prevailed in Scotland something like once in three years, and you stated generally, I believe, that of late years the epidemics have been much more rare?—Since 1863 we have had no epidemic, and I can conceive no other reason for it (for we were never so long free from it before) than the increase of vaccination.

4477. Are you aware that the late Dr. Gregory in his lecture on eruptive fevers, at page 207, states that there were no epidemics in Scotland from 1796 to 1819?—Yes, and I was in the habit, when I was a lecturer, of quoting that and other opinions of Dr. Gregory, and of endeavouring to show how erroneous they were.

4478. The great amount of mortality in small-pox of course takes place in epidemic years?—Yes.

4479. There has been no epidemic since 1863, has there?—No.

4480. Therefore this very small mortality in one year of 20, and in the last year of 100, is a mortality essentially in a non-epidemic period, is it not?—Yes, but we have not had epidemics since the Vaccination Act passed; we generally had an epidemic every three years, but now we have had eight years since that Act passed without any epidemic.

4481. Is that, in your opinion, an unprecedented time?—Yes.

4482. Are you aware that in Sweden in six

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4483. Does not that apply to the statement which you have made with regard to Scotland?—It may do so, but it has not yet done so. Having already explained that vaccination is not a perfect protection against small-pox, I should expect that when it is epidemic and present, there would be a larger number of cases, because even some of those who are vaccinated would take it. I say that vaccination is not a perfect protection against small-pox.

4484. Mr. Candlish.] Even when properly performed?—Even when properly performed; and I illustrated that at some length, showing that it was no greater protection than a previous attack of small-pox.

4485. Mr. Taylor.] Are you aware that it was stated that there was no epidemic of small-pox in London between 1796 and 1825; and then, again, that there was no other until 1838?—I am not aware of that.

4486. If you were to be made aware of the condition of things in regard to the recurrence of the epidemics of small-pox, of ever-increasing severity, your general views which you have mentioned with regard to Scotland would, as an appeal to figures, be necessarily much altered, would they not?—To this extent: that I should be obliged to admit that the Vaccination Act had not banished small-pox so much as we believed that it had done.

4487. In fact, if small-pox had increased, vaccination could hardly be said to have banished it at all, could it?—But you must not only take the decrease in the actual number of cases; you must take the decrease in the deaths in proportion to the number attacked, and you must take the decrease in those left blind, and the decrease in those left with damaged constitutions; all of which, I would believe, are blessings incidental to vaccination, even if epidemics were not completely kept away.

4488. We have it upon record, in the Report of the Small-pox Hospital for 1866, that there had been within the then last 16 years four epidemics, as to which the records of the hospital show that in the first, in 1851-52, there were 1,482 admissions; that in the second, 1854-56, there were 2,321 admissions; that in the next, from 1857-60, there were 2,060 admissions; and that in the epidemic of 1866, which was, at the time of the publication of this Report still going on, there were 5,691 admissions; and that epidemic was stated as probably exceeding any visitation within the memory of the present generation; of course you are aware that since then we have had what is called another epidemic of small-pox in London?—Yes.

4489. You are probably aware that it has been stated in evidence that 97½ per cent. of the population are vaccinated?—I should doubt that. Looking over the Registrar General's Reports, I find constantly sentences like these: "In fact, the Vaccination Act has proved a dead letter." I would strongly advise the Committee to look very carefully into the evidence of that; I should doubt it extremely from the facts which I have collected upon the subject.

4490. With your general opinion in regard to the efficacy of vaccination as against small-pox, endorsed as it is by the remarkable figures which you have given us with regard to the deaths in Scotland since 1863, does it not strike you as altogether inconsistent with that, that we have had a mortality in London now for months and months of upwards of 200 per week from small-pox, amounting, if it were extended to the year, to 10,400, or a larger mortality than that which is claimed for small-pox at the latter end of the last century when vaccination was unpractised altogether?—It is very difficult to reconcile the extraordinary prevalence of small-pox in London just now with the statement that such a large proportion of the population have been vaccinated; but I have always been in the habit of supposing that it was from the large number who were not vaccinated in England, and from the improper way in which a great many of those who were alleged to be vaccinated were vaccinated; because it is a curious fact that in the early history of vaccination (and indeed when I began practice) we always tested whether the vaccination were successful by what was called Bryce's test, which was this: that on the fourth day after we had inserted the lymph into the arm we inserted other lymph, and by a singular law the later insertion ran on and overtook the other, so that they came to a head exactly *pari passu*. We considered that as a test that the vaccination had been successful; and when I first began practice, more than 30 years ago, I never thought of vaccinating a child without doing it. But somehow it has fallen into desuetude. I believe that we are not sufficiently careful in testing the success of our vaccinations, and I should imagine that a great many of those reported to have taken small-pox after vaccination, have been improperly vaccinated. Again, I observe that one of your Privy Council vaccination authorities states, that the only proper test of successful vaccination is the character of the cicatrix. Now I find that Dr. Heim of Wurtemberg takes just the opposite opinion from a very large experience of army vaccination. He says that you can place no reliance whatever upon the character of the cicatrix, and that the only proper test of vaccination is re-vaccination. If you say that a person has taken small-pox who has a very good cicatrix on his arm, it is supposed from that that he has been properly vaccinated. That may perhaps explain that he has not been properly vaccinated.

4491. Are you aware that it is stated that the total mortality in Scotland has actually increased since the Vaccination Act of 1863 has been in operation?—I have not had my attention directed to that.

4492. You do not know whether it is stated by the Registrar General for Scotland, that scarlet fever has been the prevailing epidemic during the absence of small-pox?—I know that scarlatina has been more than usually prevalent of late years.

4493. With regard to compulsory vaccination in Scotland, the only objection, I think, which you have had to overcome on the part of the people, has been a sort of *vis inertiae*, apathy, and carelessness?—I think it arises more from carelessness than from any disapproval of vaccination. In fact, I find the greatest anxiety on the part of parents in all ranks of life to have their children vaccinated.

4494. In fact, you have in Scotland nothing comparable

comparable to the strong feeling which exists here against vaccination, have you?—No.

4495. You have no hesitation as to desiring to continue compulsory vaccination in Scotland, as I understand?—I should be very sorry indeed if our Act were taken from us.

4496. Would you feel in the same way if you had to overcome not merely neglect, but a strong conscientious objection to vaccination?—It is a difficult thing to fight against people's prejudices; but I think that when prejudice is not only injurious to the person who is the subject of the prejudice, but is also injurious to all the surrounding population, it ought to be overcome and put down.

4497. Do you think that there is no danger that prejudices of that sort would be created and exaggerated by a feeling of tyranny on the part of the State as against any individual?—It might be so; but, on the other hand, there is a great danger that the population might suffer. I do not think that a person has a right to keep an

unvaccinated child any more than to keep a fierce dog.

4498. Mr. *Jacob Bright*.] You assume that it is a prejudice, and you seem to think that it is an undoubted fact; but are you aware that there are thousands of people who do not believe it to be a prejudice at all?—I was asked the question on the hypothesis that such a prejudice exists, so that I was bound to assume its existence.

4499. It was put to you in the question that there is a conscientious opinion upon the subject; why do you assume it to be a prejudice?—I think that it is a prejudice, but I think there are many conscientious prejudices.

4500. If everybody could be vaccinated against a mad dog, the mad dog itself would be harmless, would it not?—Yes.

4501. Then, if everybody can be vaccinated as against this particular disease, why do you compare an unvaccinated child to a mad dog?—I have already said that we cannot be perfectly protected against small-pox by vaccination.

MR. FORSTER TOOK THE CHAIR.

SIR WILLIAM JENNER, Bart., M.D., D.C.L., F.R.S., called in; and Examined.

4502. *Chairman*.] It is unnecessary to ask whether you are a Physician in large practice; what appointments connected with the profession do you now hold?—I am now Physician and Professor of Clinical Medicine at University College Hospital.

4503. Are there any other appointments which you formerly held?—I was Physician to the Children's Hospital in Great Ormond-street, and Physician to the London Fever Hospital. I am also consulting physician to hospitals with which I have comparatively little to do; I am Consulting Physician to the German Hospital, for instance.

4504. What amount of practical opportunity of observation with regard to the effect of vaccination upon small-pox, and also with regard to the disease itself, have those appointments given you?—As to the effect of vaccination my opportunity of observation has been very large indeed. At the Children's Hospital I have had an enormous practice among children at the ages when they have been recently vaccinated, and for 10 or 12 years after vaccination.

4505. For how many years have you been in this position?—I was 10 or 11 years physician to the Children's Hospital, and the attendances were enormous. I could not say how many children there were, but I have had as many as 150 in a morning.

4506. I suppose that there were many thousands of children annually attending that hospital?—Many thousands.

4507. In addition to that, your private practice would give you great opportunity of observation, I presume?—Yes; I was also physician to the out-patients who attended the University College Hospital for many years, and I have had my share of private practice, which is not small.

4508. I do not know that you have had any opportunity of seeing the evidence which has been given before this Committee, but evidence has been given to the effect that many illnesses of a serious nature have been caused, and are likely to be caused, by vaccination. To what extent have you, in your public or private practice, been informed of that, from your observa-

tion?—I have never seen any evil arising from vaccination, except the local troubles. It may sometimes cause inflammation of the arm, but nothing beyond that—nothing that the patient did not recover from in a week or two.

4509. I need scarcely ask you whether you have known any case of death from vaccination?—Never.

4510. But you say that you have never known any serious illness to result from vaccination?—I have never known any serious illness result from it.

4511. Have you ever known of any case of syphilitic infection, which you had reason to suppose came from vaccination?—Never.

4512. Never in your private practice?—Never in my private practice, nor in my public practice.

4513. Have you had any case brought before you, which would seem to you, with your medical experience, to prove that syphilis had been given by vaccination?—No, I never had one such case.

4514. With regard to the protection which vaccination gives against small-pox, to what extent do you consider that it gives a real protection?—For the early periods of life it seems to be a protection against the disease at any rate, complete or all but complete.

4515. Up to the age of puberty?—Yes; I think that some years since Dr. Gregory, whom I have heard referred to since I have been in the room, published a paper, in which he strongly advocated inoculation after vaccination, and he gave certain figures from the returns of the Small-pox Hospital, showing a certain mortality after vaccination. It struck me that some figures were wanting, and I drew up what seemed to me at the time to be an answer to it. I was then comparatively young; I had it ready, and I happened to meet Dr. Gregory, who was vastly my senior, out, and I said to him, "You have not given the number under seven years of age." He laughed, and touched me, and said, "That would have told against me." I burned my papers, and I did not think it worth answering.

4515*. I suppose that I may judge that you, with your medical knowledge and experience, would think yourself not justified in not recommending

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M D., D.C.L.,
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mending every parent to have his child vaccinated early in life?—I should think myself wicked, and really guilty of a crime, if I did not so recommend.

4516. It has been stated in evidence that in addition to positive disease, resulting in some cases from vaccination, in many other cases the effect of vaccination is to produce such a febrile state of body as to render the person so vaccinated more liable to diseases, and especially to fever; and also that the effect has been to render him more liable to lung diseases; would you, with your medical knowledge, think that there is any foundation for that statement?—Not the slightest foundation; I have seen nothing to give even a colour to justify such an assertion.

4517. I suppose that you would consider that there are some cases in which children, or perhaps adults, might be in a state in which any medical practitioner of common experience would postpone vaccination?—Certainly; and under such circumstances I would not let them have a tooth taken out, or their gums lanced, or any injury inflicted upon their surface.

4518. Am I to understand from that, that the general deduction which you make is, that any inconvenience arising from vaccination is, in fact, the inconvenience from the small local wound?—Yes, the slight constitutional disturbance which necessarily accompanies the normal inflammation of the arm.

4518*. I need not ask you whether you are well acquainted with the medical profession generally, and especially with the leading members of it; but being so acquainted, do you consider that the opinions which you have now given are those which are generally entertained by the medical profession?—I do.

4519. Do you know any medical practitioner of standing, or whom you would consider to be of standing, who disbelieves in vaccination or thinks it mischievous?—I do not. I cannot even conceive of anyone doing so.

4520. May I ask whether you have children of your own?—I have six.

4521. Not only as a physician, but a parent, I suppose you would think that you were not doing your duty if you did not have them vaccinated?—I should consider that I was very much wanting in my duty, and, in fact, deserving of punishment, if I neglected to have my children vaccinated.

4522. You have had the responsibility of advising Her Majesty the Queen, I believe?—I have.

4523. And you have thought it right to advise the Queen to encourage vaccination in the case of all the members of the Royal Family, have you not?—By all means, and the Prince of Wales too.

4524. I suppose that the Queen has thought it right to comply with that advice?—Her Majesty has done so, and the Prince of Wales too.

4525. Your name looks as if you might have some connection with the discoverer of vaccination; is that the case?—Not at all, I am very sorry to say.

4526. What is your opinion with regard to the advisability of re-vaccination?—I think that it is most desirable.

4527. Would you name any special time at which you would do it?—I think after puberty. If the disease were epidemic, when persons are much more sensitive, I would re-vaccinate them after seven years of age, and if the marks were not

good, even at an earlier age, as I have done in the case of my own children.

4528. As regards the general effect of the great State encouragement of vaccination, what effect do you think it has had upon small-pox in England?—I am not sufficiently acquainted with the figures, and, not expecting to be asked questions of that kind, I have not gone into the subject.

4529. You are aware that at present there is a law by which vaccination has been made compulsory by the State; have you formed any opinion as to the desirability or otherwise of compulsory vaccination?—I think it is most desirable.

4530. Having got a compulsory law, what would you imagine would be the effect of its abolition?—Certainly to increase small-pox, and the mortality from small-pox.

4531. Mr. *Holt*.] I presume that we are not to understand that because you have not seen any cases in which injury arose from vaccination you would say that therefore there are no such cases?—Certainly not, I could not say anything of the kind.

4532. But you have not heard of any such cases?—I have heard of cases of the kind; but I was asked what I had seen or knew myself, and I should not like to give hearsay evidence before this Committee.

4533. You have not evidence sufficiently well supported to satisfy your own mind on that point?—I have seen nothing of the kind.

4534. Do you consider it dangerous to take lymph from a child suffering from disease?—I do not know that it would be dangerous. I could not say, but I should not do it.

4535. Would the possibility of injury arising in such a case depend at all upon the skill of the operator?—I cannot say; I should think from my experience that among the enormous number of sick children which I have seen among the poor, a very great many must have been badly vaccinated, and vaccinated sometimes possibly from children suffering from some disease; but as I have never seen any injury to arise, I doubt if it would follow. If so, it must be a very rare thing or I should have seen a case. I refer to a child vaccinated from bad lymph, or lymph from a child which is not healthy.

4536. At what age would you recommend vaccination to be performed for the first time?—I am not an authority on the subject, and I would prefer limiting my answers to subjects upon which I think I am an authority.

4537. Mr. *Jacob Bright*.] Whom would you consider to be an authority on the subject of re-vaccination?—Dr. Seaton.

4538. We should not be likely to be led on so important a matter as that by one man; has the profession itself no opinion upon the question of re-vaccination?—I have an opinion, but I would rather not give opinions; I would rather limit myself to facts as far as I can.

4539. As to the question of re-vaccination, and the time when it should take place, is it so unsettled a matter that the profession is not generally agreed about it?—I think that it is the commonly received opinion that re-vaccination should be performed at about seven years of age, and after puberty, at times when the disease is not epidemic.

4540. Do you think that it is the general opinion that re-vaccination should take place at seven

seven years of age?—I think that that is the general opinion; it is a common one.

4541. Do you know why that age was chosen?—I think it originated from a fact which I stated at the beginning, namely, that they find the mortality in the Small-pox Hospital to increase after that period of life.

4542. You are not aware that Dr. Simon fixes it at somewhat more than double the age of seven?—I am not. I think that he would not do that at the present time when it is epidemic; but I have had my own children re-vaccinated, and that is all I can tell you.

4543. It appears that, with regard to re-vaccination, the opinion of the profession is very unsettled?—I do not think that it is very unsettled at all.

4544. With regard to the time at which re-vaccination should be performed, it is very unsettled, is it not?—Possibly, if different statements have been made on that point.

4545. Is it the opinion of the profession that re-vaccination is a matter of great necessity?—I think it is quite so.

4546. Then, if it is a matter of great necessity, ought it not to be made compulsory like the original vaccination?—I wish it were.

4547. Do you think it should be made compulsory?—I do, certainly.

4548. You are of opinion, in fact, that re-vaccination, as well as vaccination, should be compulsory?—I am; and I believe that it is so in many countries.

4549. If you undertook to make it compulsory, would you not have great difficulty in settling how often re-vaccination should take place?—I do not propose to make it compulsory; I wish it were so, but I am not a legislator, and that is a question which does not concern me. I only tell you what, as a medical man, I think would be desirable.

4550. You said, that not to vaccinate a child was a crime, did you not?—I did.

4551. And of course then, compulsory vaccination must be necessary?—Quite so.

4552. But you also stated, as I understood, that you were very little cognisant of the statistics of this great question?—I am not cognisant of the general figures; I am sufficiently cognisant of the general facts, and I have obtained those general facts from figures, but I am not prepared here to quote them.

4553. I understood you to say that with regard to the general statistics, say, of the time when epidemics have occurred, and the greater or less severity of those epidemics, you have not gone into those figures?—No, I judge rather from the mortality of the unvaccinated and the mortality of the vaccinated, which seems to me so very remarkable.

4554. So far as outsiders are concerned, you are aware that it is very difficult to form any opinion, because they have been giving us information from the hospitals, and then they have suddenly shut that up for some reason or other?—I was not aware of that.

4555. When you vaccinate a child, you give it a disease, do you not?—Yes; everything which is not healthy is disease.

4556. Whenever anybody has a disease it requires, of course, a certain amount of strength to throw off that disease, does it not?—I do not even know what you mean by "throwing off a disease;" that is utterly meaningless to me.

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4557. I may suppose that an accident occurs, or it may be a wound or anything else; one person would get rid of the effects of that sooner than another, would he not?—Certainly.

4558. And the healthier and stronger person will get rid of it sooner than the weaker one, will he not?—Not at all; that is quite contrary to fact.

4559. There are, of course, amongst children the well-nourished and there are the ill-nourished; there are the strong and there are the weak; there are those with good constitutions and those with poor constitutions; there are those living in a good atmosphere and those living in an atmosphere more or less defiled; will those who are in the worst circumstances, such as I have described, get rid of the disease which you give them in vaccination so soon as those who are in the best circumstances?—Yes; I believe it runs a definite course in the one case as in the other.

4560. You are aware, of course, that there are medical men who hold a totally opposite opinion?—I have nothing to do with anybody but myself; I have not come here for the purpose of going into other men's opinions; I would rather limit myself to what I know.

4561. Then if a child were below par, and had from some cause or other an enfeebled constitution, you would not think that on that account there would be the least necessity to defer vaccination?—That would be quite a question of degree. The terms which you have used are so vague, that it is impossible to give a scientific answer.

4562. They are not vague to the general public?—But they are vague to us; I say that if a child had a certain degree of weakness, I should certainly not have it vaccinated, because the probability is, firstly, that the vaccination would not take; and secondly, if it did, I should not choose to produce inflammation in the child's arm which might be an additional cause of disturbance.

4563. Among the re-vaccinated persons in London, have you never come in contact with one who has very much repented having been re-vaccinated, from the fact that he could not get well after it?—I have not.

4564. Then your experience as a medical man is much less than mine as a layman?—Very likely; I cannot tell the amount of yours; mine is considerable.

4565. Without having gone into the question of figures, without being able to meet the fact that we have a great epidemic upon us now, with, according to the best evidence which the Privy Council can give us, the enormous per-centage of vaccination, and without being able to rebut those figures in the least, do you think it a crime to neglect to vaccinate a child?—I do absolutely.

4566. Mr. Taylor.] It is your opinion, is it not, that when performed in a proper manner, and at the proper time, vaccination may be called almost a perfect protection against small-pox?—For a certain time.

4567. You would consequently be of opinion that if vaccination were sufficiently performed both in regard to quantity and quality, we might almost hope to stamp out small-pox altogether?—Not quite; but I think you would diminish it. Just as persons who have had small-pox have it again, so a certain number of persons who have been vaccinated would still be liable to small-pox; but if you could reduce the centres of infection as you would do by vaccinating and re-vaccina-

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ting generally, you would have much smaller epidemics, if you had any.

4568. There is no doubt, I presume, that vaccination is now performed in London to an extent to which it was never performed before?—That is a question which I would rather leave to those who are more cognisant with the general working of the Compulsory Act than I am.

4569. We have had it stated as a general opinion, that probably not above $2\frac{1}{2}$ per cent. of the population of London were unvaccinated, do you agree with that?—I do not know anything upon that question, and I cannot answer it, but I should have said that there were very many more persons unvaccinated from my knowledge of unvaccinated people.

4570. Is it your opinion that the mode in which vaccination is performed is probably better at the present time than it has ever been before?—I am not an authority upon the mode of vaccinating, and therefore I would rather not give an opinion upon that point.

4571. Of course, there is a great difference in its efficacy in regard to whether it is well or ill performed?—Certainly; I knew a case lately of a very large establishment vaccinated by two different surgeons. Nearly all the cases vaccinated by one surgeon took, but scarcely one took out of a considerable number vaccinated by the other. Now they would all have had the credit of being re-vaccinated, and re-vaccinated at the time when the disease was in the country. If they had come to London in that state, a very considerable amount of small-pox might have occurred among them, and it would have been said that they were re-vaccinated the other day. There, in consequence of a defective mode of vaccination or of defective lymph, half the people were unprotected by that vaccination.

4572. Is it consistent with the general opinion which you have of the good results of vaccination, that the mortality in London from small-pox should be now, and should have been for so many weeks so very large?—An answer given to that question without certain data would be a most fallacious one. I should want to know the number of persons out of those who died who had been vaccinated, and the number of those who died who had been re-vaccinated, and then the number attacked, so that I might have the relative mortality; but without those facts, it seems to me that it would be a waste of time to attempt to answer the question.

4573. One would hope that as the population had become larger, and as a larger proportion of the population were vaccinated, the centres of small-pox disease would be diminished, and the amount of attacks would also be diminished?—I have no doubt that it would be so.

4574. You have never known any cases of syphilis communicated by vaccination?—Never.

4575. You heard, no doubt, of the name of Ricord as that of a man of eminence?—Certainly.

4576. Are you aware that he stated, that if it could be proved that syphilis could be communicated by vaccination the system must be given up, because we had in the present condition of our medical knowledge no means of testing the presence of constitutional syphilis?—If he did make such an assertion, I should think that he would have qualified it very considerably, and if he did not qualify it, it would have been of very little worth.

4577. Your opinion is, that such cases, if they exist, must be very exceptional, and very few?—During 10 years I was physician to the Children's Hospital, and there were many thousands of children, and many fresh cases every morning. I was connected with the University College Hospital for more than 30 years. I was physician and attendant at the Fever Hospital for a considerable number of years (I forget now how many, eight or 10, probably), and I have had, as I say, a pretty large private practice, and I have never seen one case in which syphilis was communicated to a child by vaccination. Syphilis in children is common enough, I am sorry to say, but I have never seen one case in which there was reason even to suspect that it was communicated by vaccination, and therefore, I say that it must be infinitely rare; I do not mean that there never has been a case, though, even if there has, I cannot say whether the disease has been communicated by the lymph, or whether there was any accidental communication to the part afterwards, but if it ever did, or ever does occur, it must be so infinitely rare as to be practically insignificant, and of no worth.

4578. Are you aware that a French medical man, who, I think, was director of the Vaccine Establishment at Paris, stated that something like 400 or 500 cases of syphilitic vaccination had been known?—No, I am not aware of that.

4579. Dr. Brewer.] During your attendance at the Children's Sick Hospital, in Ormond-street, have you any reason to believe, or even to suspect, that any constitutional taint has been conveyed from one person to another by vaccination?—Never.

4580. Have you any reason to believe that vaccination has made those who have submitted to it scrofulous or phthisical?—Not the least.

4581. Do you believe that vaccine lymph is characteristic, that is to say, that the lymph of the vaccine vesicle is in itself a typical or characteristic lymph, that it is not like anything else that we know of, being *sui generis*?—It is *sui generis* altogether; it has no microscopic or chemical character, but I should judge it by its effects, just as I should judge that two seeds were different, although I could not examine them, one producing an oak and the other an elm.

4582. Have you any reason to believe that small-pox, though controlled by vaccination, is supplanted by scrofula, fever, diphtheria, or other diseases of childhood?—Not the least.

4583. Do you believe that that theory is utterly without foundation?—Utterly without foundation.

4584. Is scrofula or phthisis more common since vaccination than it was before vaccination?—I do not know the facts.

4585. Does a severe form of confluent small-pox leave the patient subject to constitutional disturbance and serious lesions?—I have seen such cases.

4586. Have you seen any evil resulting from vaccination at all comparable with that which you have seen resulting from small-pox?—Nothing of the kind.

4587. Have you seen phthisis and consumption in various forms resulting from a severe form of small-pox?—I have.

4588. Did you ever see such a result from vaccination?—Nothing of the kind.

4589. Have you seen scrofulous disease very prominently come forth after a severe attack of small-pox?

small-pox?—I have seen consumption; but serofulous disease is a very large word.

4590. Mr. *Candlish*.] You said that if a child is vaccinated with good lymph, and by a proper operator, it will be protected; what in your opinion constitutes defective lymph?—Supposing the lymph to have been kept some time, and then only to have produced a sore, it might have lost its qualities, so as no longer to produce the true vaccine vesicle running its proper course.

4591. Would not the intermixture of blood with the lymph render it inoperative?—That I do not know; I have not had sufficient experience in vaccinating of late years to be able to answer that question.

4592. Is it not possible that the intermixture of blood with the lymph might produce disease?—So it has been stated; but I am not an authority on the subject.

4593. What would you describe as an improper or defective way of vaccinating?—That which produced no result, or not the normal result.

4594. Would that be the fault of the operator?—It might be.

4595. Then what would be the particular defect in the operation from which failure would result?—I remember once going to see a gentleman who was vaccinating a great number of cases; he is dead now; he was a man of some position. I saw a child being vaccinated, and I saw her arm running rather freely with blood. He said: "I cannot think how it is that I really am so very unsuccessful; it is not one in three or in four cases that takes. I was then a young man, but I thought I knew why it did not take; it was because he fetched so much blood that it washed out the matter. He vaccinated them, but he did not get the lymph in; that I call defective vaccination.

4596. Do you think that the introduction of blood would not cause disease?—I do not say that the introduction of blood would not produce disease. I have no experience as to that, and I would rather not speak upon it.

4597. Are you aware that your great namesake held that one puncture would be absolute protection against small-pox for life?—I think that anything of that kind that he said would now be comparatively of little worth, because we have so much larger an experience than he had; and he was so unprejudiced a man that he would have modified his own views in accordance with the advancement of science.

4598. That is no longer the opinion of the profession, then, is it?—No, not at all.

4599. Do you think that the profession has now attained to such accurate and complete information as to justify the Legislature in enacting a compulsory law on the subject of vaccination?—Certainly I do, without any doubt.

4600. As the profession has grown since Dr. Jenner's time, may it not grow from our time onward throughout a period equivalent to that which has passed since he gave that opinion that one puncture would protect for life?—No doubt it may.

4601. Then, if that be so, we have been and are legislating on imperfect knowledge?—If it be so, I think it will be just as right to legislate upon the hypothesis that we may have a period of darkness.

4602. Notwithstanding that, as you are aware, there are considerable differences of opinion now among medical men?—I have never heard of any difference of opinion on this subject among men

who were, in the words of the Chairman, men of eminence as men of science.

4603. Are you aware that many eminent men will not now hold with you that it is desirable to vaccinate every five years?—If I said it was necessary to vaccinate every five years I said what I did not mean; but I have said nothing of the kind. I do not know even what it is that you refer to. As to re-vaccination, I said that I thought it was desirable that everybody should be re-vaccinated, not every five years, nor every certain number of years, but a second time only; though, for my own protection, I would be vaccinated again lest my last vaccination should have been defective. I have seen during this epidemic that persons have been very susceptible of small-pox because it is an epidemic.

4604. Does not the very fact, that under the pressure of an epidemic you would re-vaccinate a second and third time, indicate some want of pith in your own opinion?—Not the least in the world.

4605. Your opinion is, that it is not necessary to re-vaccinate more than once, is it not?—I have not said so. I do not wish to be understood to say what I do not mean. I will say what I mean, and beyond that I would rather be excused. I mean this: that in the case of a person who has been thoroughly protected by vaccination, say for seven or eight or ten years of life, who has been exposed, under those circumstances, to the poison of small-pox, if an epidemic comes, although a week before he was protected, he shall not be protected when the disease becomes epidemic; that is to say, that that epidemic constitution, whatever it may be (I do not know what it is), produces such a condition of the system that it renders the person more prone to take the disease. Therefore I, for example, having been vaccinated many times in my life (when I was at the Small-pox Hospital I was vaccinated, and before I went there, because I was going to encounter undue exposure), have been vaccinated since on occasions when small-pox was very prevalent, but the vaccination did not take at all. Then the small-pox became epidemic; and I said, "I think I had better be re-vaccinated when my children are"; and now I take perfectly like a child, because I believe the epidemic constitution has rendered persons prone to take the disease. Therefore, I think it desirable for everybody to be re-vaccinated when an epidemic occurs, and I have never seen any injury from it; but evil may arise from its being neglected.

4606. Do I understand by that answer that you wish the Committee to infer that there are epidemic periods so strong as to overcome the protection which vaccination may have given?—Yes, or which small-pox may have given; do not draw a conclusion from my words which I do not intend. I think, if you take any given number of persons who have been vaccinated and a given number who have not been vaccinated, that during that epidemic constitution a very large proportion of those who have not been vaccinated would have died, and a very very small proportion of those who had been vaccinated would die, so that it would not do away with the protective influence of vaccination. I have not said that, nor do I mean it.

4607. Is the "Medical Times" recognised as an authority among the profession?—Certainly not; no journal is an authority any more than the "Times" newspaper is an authority; or the

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 "Daily News," or the "Telegraph," or the "Standard." It is a mere receptacle of information from other people.

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4609. The articles in the paper would, at that time, at any rate, be excellent, and well worthy of the attention of the profession?—It was for a very short time that I was the editor.

4610. Do you know Mr. Jonathan Hutchinson?—Yes; but I do not think that he is the editor of that journal.

4611. In a case upon which he has been writing, he alleges that one child has conveyed syphilis to nine persons; are you aware of that?—I have heard that stated, and no doubt Mr. Hutchinson is right, because he is a man of position in scientific matters.

4612. The conclusions drawn from the facts in that case are "that a child in apparent health with latent syphilis may yield pure vaccine lymph, or may yield syphilitic poison only, or both, and that it is the admixture of blood with the lymph which gives the syphilis;" are you prepared to give any opinion upon that subject?—I would rather not express an opinion upon a matter as to which I have no practical knowledge. I am not sufficiently acquainted with the subject to be able to answer the question. I have not worked it out.

4613. If it be true that syphilis has been thus conveyed, would that modify your opinion as to the possibility of vaccination conveying syphilis?—I have expressed no opinion upon the subject; I have endeavoured, as far as possible, to confine myself to my own experience, and I have done nothing more.

4614. You are not prepared to say that it might not happen that syphilis was conveyed by vaccination?—I am not prepared to say either that it could or could not be so conveyed.

4615. Dr. L. Playfair.] I think I understood you to state that in ordinary times re-vaccination after the age of puberty is a sufficient protection against small-pox?—Yes.

4616. When you stated that in your opinion

re-vaccination should take place at seven years of age, I presume that that was not under ordinary circumstances, but during an epidemic time?—During an epidemic time.

4617. In ordinary circumstances, you would consider a single re-vaccination after puberty to be a sufficient protection, would you not?—Exactly.

4618. Except in an epidemic time, when increased care should be taken?—Except in an epidemic time, when increased care should be taken. There is no definite period at which re-vaccination should be performed. It has been shown, I think, that the disposition to suffer from small-pox increases with years; and, therefore, A may draw the line at one age and B at another; and it is a mere quibble to say that there is a difference of opinion.

4619. I understand that, from the large experience in the Small-pox Hospital, where there is an increased tendency to small-pox as years advance, the profession have recognised (what was not known to Jenner) that the protective effect of vaccination may wear out, and that therefore it is desirable to re-vaccinate?—Exactly.

4620. *Chairman.*] In reference to the questions asked by the Honourable Member for Sunderland, I suppose that we may consider that you look upon vaccination as being what we might properly call an antidote to small-pox?—No doubt.

4621. But although it is no doubt a very powerful antidote and is generally successful, it is not absolutely and certainly successful?—Certainly not.

4622. When you state that you consider that at the time of epidemic re-vaccination is desirable, do you mean by that to express an opinion, that the necessity of again using vaccination as an antidote, at all takes away the necessity of using it at first?—Certainly not.

4623. In fact, your belief that re-vaccination is desirable only confirms your other belief that the first vaccination is necessary?—Certainly. I was asked who would be an authority on the subject of re-vaccination, and I named Dr. Seaton. I should have named also Mr. Marson, of the Small-pox Hospital.

Friday, 5th May 1871.

MEMBERS PRESENT:

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave,
Sir Smith Child.

Mr. William Edward Forster.
Mr. Hibbert.
Mr. Holt.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. JAMES FURNESS MARSON, F.R.C.S., re-called; and further Examined.

4624. Mr. Candlish.] I WISH to call your attention to a passage in an article contributed by you to a System of Medicine edited by Dr. Reynolds; you are speaking of a form of small-pox designated *corymbosa*, and at page 229 you say, "Of 104 cases of *corymbosa* small-pox admitted into the hospital 29 were unvaccinated, 74 vaccinated, and one was after inoculation; of the 29 unvaccinated persons 13 died, or 44 per cent; of the 74 vaccinated 32 died, and, deducting two who died of superadded disease, there remains a mortality of 41 per cent; the single case of *corymbosa* small-pox after inoculation died; it will thus be seen that *corymbosa* small-pox is in all cases a very fatal form of the disease, and brings life into danger nearly as much in vaccinated as in unvaccinated persons, varying only about 3 per cent.:" the point to which I wish to direct your attention is, that in those cases vaccination seems to have been no protection; is that so?—It so happened, I suppose, that it was not; those were not materially modified cases, I dare say, but the form of the disease is a very severe one, and is in itself probably the most severe form, save the malignant or hæmorrhagic form, that we see; patients seldom recover from that form of the disease, but the cases are very few; there have been 104 cases only admitted into the hospital in 30 years.

4625. But amongst those cases 44 per cent. of the unvaccinated died, and 41 per cent. of the vaccinated, the total number of cases being 29 unvaccinated and 74 vaccinated; that is so, is it not?—Yes; *corymbosa* small-pox is a singular form of the disease; a great many medical men in this country have never seen it at all, and do not know it, and some have come to the hospital on purpose to see it because of its rarity.

4626. I suppose that it may be concluded as ascertained that against this form of small-pox vaccination is no protection?—The protection would seem to be very small, but the cases are not many, and it might happen that those cases were not very well vaccinated.

4627. You add, "Why this mortality among the vaccinated it is impossible with our present knowledge to say, and it is probably one of those things which will for ever remain inexplicable;" you concur, I presume, with all sound thinkers in the belief that we have yet much to learn in

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reference both to vaccination and small-pox?— Yes, I think that it is likely we have.

4628. Mr. J. Bright.] In answer to Question 4148, as to the past and present modes of treating small-pox, you say, "I fear we have no control over the disease; there is no specific; we have no power whatever of controlling, I think I may say, either small-pox, scarlatina, measles, and the eruptive diseases," does that correctly represent what you said?—I should correct that by saying that we have no power of controlling the febrile eruptive diseases.

4629. Is that so in your opinion, or is it the opinion given by the profession generally?—It is the opinion held by the best informed in the profession generally, I believe, so far as small-pox, measles, and scarlet fever are concerned. It might be limited to those diseases, and a few others of the febrile eruptive class.

4630. Has the College of Physicians no knowledge on the subject with regard to the treatment of those diseases?—Not as regards stopping the progress of the disease. We can perhaps do some good, but we cannot stop the progress of the disease, nor is there any specific for curing any one of the three diseases which I have named.

4631. Then you evidently think the profession is (I think I may say) absolutely powerless with regard to the treatment of those diseases; if so, is it as powerless in regard to the treatment of other diseases?—Certainly not; that is a different thing altogether. Those are specific diseases which run a certain course in spite of anything that can be done to prevent them. I ought perhaps to have said that the only check we have is vaccination upon small-pox. There we have a very great check upon the disease, but one which is of no use after the disease has commenced. That is the point.

4632. After having attended upwards of 13,000 cases of small-pox, is it the case that your experience has not enabled you to give to the profession any information with regard to that disease which is likely to serve them in their private practice?—Not much, I am sorry to say, in the medicinal treatment, because we cannot control those three diseases.

4633. Then you do not think that medicine is of any use whatever in controlling this large class

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class of diseases which carried off no less than 64,000 persons in the year 1869, according to the Registrar General's account?—Medicine *per se* may not be of use, but vaccination has an amazing power over small-pox, which is one of those diseases. It is often wished that we had a similar check to scarlatina.

4634. But with regard to the other diseases, medicine has no power in controlling them?—It may do some good; the patients want attending to; they want their bowels kept open, or sometimes the bowels are somewhat too open, and want checking; suitable diet may be prescribed for them, and proper cleanliness observed, and proper care given to them. Something can be done for their good, but not very much to check the progress of the disease.

4635. I presume, of course, that those precautions or attentions to patients would have the same effect as with regard to the other diseases?—Just the same.

4636. Is not the mortality from small-pox very much larger in hospitals than in private practice?—That may be so to some extent, because I find frequently that a medical man will keep two or three mild cases at home, and send the bad cases to the hospital. That is very common.

4637. Do you not think that the crowding together of those patients, in large hospitals, is injurious?—It is bad; hospitals are bad, no doubt. Every hospital is more or less bad, and the lying-in hospitals are especially bad. My opinion is, that there ought not to be a single lying-in hospital in this country, or in any other country.

4638. How do you account for the rate of mortality being higher now than it was in the last century?—I do not think it is higher. Taking small-pox altogether, it is not nearly as high as I can show you from the last table from which I gave you particulars; that it is not so high now as it was 19 years ago, taking all the cases coming into our hospital. The general mortality of small-pox patients in the hospital, for 16 years preceding 1852, was 20 per cent. For 16 years, from 1851 to 1868, it was only 13 per cent.

4639. Referring to the general mortality of England, how is it that the rate of mortality is higher now than it was during the last century?—I deny that it is so. It is not so high now as it was 16 years ago in the case of small-pox.

4640. Then you admit that we can draw a comparison between the state of mortality now and during the last century; there are the means for forming a comparison, are there not?—Yes, I think there are, but I cannot at this moment direct you to them. I can give you the experience of our hospital for two separate periods of 16 years.

4641. I am speaking of the general mortality of the country?—I believe that it has been made out by Dr. Greenhow, that the general mortality is not so great as it was a century ago; that more people die of old age now than died of old age a century back. That has been very elaborately investigated, and I think it came out in a Blue Book some eight or 10 years ago.

4642. Of course, if vaccination has saved a vast number of lives, and the more general you make it the more lives ought to be saved, one would think that it ought to be readily shown that there is less mortality now than there was before?—Yes, and I believe it can be readily

shown. Those people who would formerly have died in infancy, or in early life, now die of old age.

4643. I believe that we have had evidence to the contrary, but, probably, you have read it?—No, I have not. I have been here only on the two occasions on which I have been examined.

4644. In the summer of last year did not all the medical journals, the "Lancet," the "Medical Times," the "Medical Circular" and others, repeatedly draw attention to the terrible epidemic of small-pox in Paris for want of a compulsory vaccination law, and to the comparative immunity in this country from that disease in consequence of a compulsory law?—They might have said so. It was so at that time, and they were warranted in making that statement, because the disease had been apparently very much checked in Scotland and in Ireland by vaccination.

4645. Do you think that under those circumstances the law has anything whatever to do with these epidemic visitations?—Perhaps not; but if the law is well carried out it will save a great many people who would suffer from small-pox if there were not such a law.

4646. You tell us in your article on small-pox in Dr. Russell Reynold's "System of Medicine," that there was no epidemic of small-pox in London from 1796 to 1825; was there any Act of Parliament then in existence tending to keep away small-pox?—No, but it was soon after the introduction of vaccination, and it was then thought that probably vaccination had a great deal to do with it. It was so imagined, and it was a fair conclusion.

4647. Is it not likely that that was pure imagination and nothing else on this ground; that I presume we have no evidence that vaccination was extensively practised, and had become general among the people, and especially among that class of persons who are always most subject to epidemic disorders?—It was partly imagination, I suppose. It was hoped that vaccination had done more than it really had done. I have stated that we have had three times as many patients in the Small-pox Hospital during the 16 years of which I gave a second account than we had in the previous 16 years. I omitted to say that we have now about three times as much accommodation in the new hospital as we had in the old one, which, in a great measure, accounts for it. We could only well accommodate about 35 patients in the old hospital, and we can in the new one well accommodate 108 patients.

4648. Do you not think that the lesser prevalence of small-pox in the first quarter of the present century may have been due to a great extent to the discontinuance of inoculation, rather than to the practice of vaccination?—Very likely it was, because it was found that inoculation, unfortunately, spread the disease, and that after the introduction of inoculation there was a greater mortality from small-pox in the country than there was before. The means of inoculating could be readily sent about the country in a letter, and they could start it anywhere, and the inoculated case was just as infectious as a natural case of small-pox, and sometimes it killed persons. I knew a lady some years ago of the name of Holmes from Norfolk, who lost three children from inoculation.

4649. Of course you are perfectly aware of the figures which were published by the London Small-pox Hospital a little time ago?—Yes.

4650. And

4650. And of those which were published by the Registrar General?—He now ranks the hospitals all together, and does not mention any of them in particular unless there have been several deaths. A fortnight ago we had five or six deaths from the Hendon Union, and he mentioned that.

4651. Still we have had what were considered very accurate and important statements in regard to the number of deaths among the vaccinated and the unvaccinated?—Yes.

4652. Are not those discontinued now?—I think he explained it last week, or the week before, by saying that he found that the returns were so very imperfect, that they only misled people.

4653. What returns do you refer to?—The returns of the Registrar General; the information is communicated by anybody who goes to the Registrar to give information of a death.

4654. Did he not give especially the returns from the London hospitals?—He used to give the returns of ours. I cannot say whether he has done so in the case of the new hospitals, but I think not; I believe that as regards the hospital at Hampstead he does make some returns.

4655. You have paid great attention, and I presume as much attention as anybody in England, to this subject, have you not?—I suppose more attention probably.

4656. Is it not in some respects extremely discouraging to you to find that after all that has been said about vaccination, and after all that Parliament has done in regard to it, we have at this moment a more severe epidemic than we have had ever since we began the practice of registration, and perhaps a more severe epidemic than we have had in the whole of this century?—No, I cannot say that it is at all discouraging to me, because I know that all those people who have been dying lately might have been saved from dying. It is painful in the extreme to see the patients in the hospital who have not been vaccinated. We have at this time a poor woman who has been in the hospital ever since the 14th of November, and I am not sure that she will not die now; she is nothing but a skeleton, and has lost one of her eyes; it is dreadful to see her. We parted with a man a fortnight ago who had been with us ever since October.

4657. I have no doubt that you find very dreadful cases, but that does not disturb the fact that before you had compulsory vaccination in this country, you were not subject to more serious epidemics than that which is raging at the present moment?—Perhaps not.

4658. Then is not that a cause of discouragement to those who so much advocate this system?—I should like the gentlemen of this Committee, if it were possible, to go round the Small-pox Hospital; I think that I could convince every one of them in a week, or in two days, or perhaps in one day, that it was a most desirable thing to have vaccination performed.

4659. You have spoken of successful vaccination; is it possible successfully to vaccinate everybody, using the word "successfully" in the generally received meaning of the term?—I very rarely indeed have a failure in a single place; I vaccinate at one station in five places, and at another station in six places. There are gentlemen in this room who have seen my vac-

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nation at those stations, and they know I scarcely ever miss in a single place.

4660. Can you be reasonably certain that when a man who has been vaccinated is 30 or 40 years of age he shall invariably have the marks of what you call successful vaccination?—Yes, if it is thoroughly well done the marks do not wear out.

4661. Is it likely that we could ever have a system which would insure its being what you call thoroughly well done?—I do not know; that is doubtful; because it has to be done by so many hands all over the country, and you know as well as I know how careless many people are.

4662. Dr. Woodville was one of your predecessors at the Small-pox Hospital, was he not?—He was.

4663. Was he one of the earliest vaccinators in London, having discovered the cow-pox in Mr. Harrison's dairy in Gray's Inn-lane?—Yes, he introduced it at the Small-pox Hospital.

4664. And he was very active in propagating cow-pox in France and elsewhere, was he not?—I believe he was.

4665. Did he protect himself by vaccination?—I should think most likely that he was inoculated long before, but I do not know anything about that. He was a man of middle age when vaccination was introduced.

4666. Did you know Dr. George Gregory, another of your predecessors?—He was not my predecessor; I acted with him for 17 years.

4667. Did his view with regard to the number of pustules necessary for vaccination coincide with yours?—Yes; I remember his having said, somewhere or other in his late writings, that if vaccination were thoroughly well done in several places, patients had very mild small-pox.

4668. What is your view with regard to the number of operations necessary upon the arm?—It depends a good deal upon the way in which it is done. If it is done as they do it in Scotland, one or two will do very well (*making a diagram, and explaining it to the Committee*). That is the general way of doing it in Scotland, and in that way they make a large place as big as a sixpence, by making a wound and rubbing the lymph in.

4669. Mr. Muntz.] Do they do it very often in Scotland, on each arm?—Very often.

4670. Mr. J. Bright.] I have before me Dr. George Gregory's work on eruptive fevers; he says, "Hence we may learn how small importance is to be attached to the cicatrix as an evidence of the perfection or imperfection of the vaccine process. Perfect security is compatible with a small and scarcely distinguishable cicatrix without a large watery cicatrix at all; at least none perceptible five years after the operation;" is he an authority on those questions?—He was; but he was a very singular man indeed, and he had never investigated the subject in the extensive way which I have. He once wrote a paper on the subject, and then unfortunately departed from it.

4671. Is not that a common thing with both medical men and others?—They sometimes write early in life what they are sorry for later in life.

4672. Mr. Holt.] I suppose that the profession regard small-pox with reference to the effect of vaccination as something similar to the effect of yeast, inasmuch as it produced a fermentation in the blood?—Some have explained small-pox in that

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that way, because it throws out an eruption; but I know that some superior men object to that view of the case, though it seems a common idea that it is so. It is certainly received into the blood. The disease, I believe, is almost always received by breathing infected air into the lungs, and it is introduced into the body in that way, not by touch.

4673. At any rate vaccination produces artificially that which small-pox produces naturally in the blood, does it not?—In a sense it does.

4674. That is to say, that it works out some property in the blood which I suppose we may call susceptibility to disease?—Yes, so that the person is rendered, for a time at all events, insusceptible of small-pox.

4675. Is medical science acquainted with the particular property in the blood which renders a person susceptible?—I am afraid not. That is one of the things which is left for us to find out yet.

4676. This susceptibility has only reference to this specific disease, and not to any other disease; that is to say, after vaccination, or after an attack of small-pox the person would be just as susceptible to measles as before; is that so?—Just so; the two things do not act one against another as regards other diseases.

4677. But the effect of an attack of measles is to render the person free from susceptibility to a further attack, is it not?—There are exceptions, but commonly it does so in the same way as small-pox.

4678. Would it be right to regard those properties in the blood which render people susceptible to different diseases as impurities?—I do not know, but I should think you can hardly view them in that way. Somehow or other human beings are susceptible of certain diseases which commonly they have but once, such as small-pox, scarlet fever, whooping cough, and measles.

4679. Would it not be possible to purify the blood by any other means than vaccination?—I am afraid not.

4680. It would not be possible to illiminate from the blood the susceptibility to this disease by any other means than vaccination?—I am afraid that it would not.

4681. With reference to the large vaccine stations, are you acquainted with other stations in the country than your own?—Not particularly. I have vaccinated at two of the largest stations in this great town for many years. When the Small-pox Hospital was at Battle Bridge I used to vaccinate about from 3,000 to 4,000 a year for many years. Once, in 1838, I vaccinated just upon 5,000. I have vaccinated at another large station in London, Surrey Chapel, since we went to Highgate, when the vaccination was in a great measure, I may say, destroyed at the hospital by removing out of the thickly-populated districts.

4682. Sir S. Child.] I think you mentioned that small-pox, scarlatina, and measles cannot be cured, but must run their course?—I am afraid it is so.

4683. And that is a fixed course; it does not vary, does it?—No, it is a fixed course.

4684. Is not that the case with gastric fever and typhus fever; I am afraid it is; I fear they cannot do very much to be of service either in gastric fever or typhus fever.

4685. Medicine can only enable the patient to

resist the disease; is that so?—Precisely; we had unfortunately a strong instance of that a few years ago, when the Prince Consort died of gastric fever; if his life could have been saved by any means which medical men possessed, no doubt it would have been saved.

4686. You especially mentioned the eruptive fevers; practically it is the same with all fevers, is it not?—Yes, typhus and typhoid fevers are very commonly accompanied with a rash.

4687. I understood you to say that when performed within a certain period after the incubation of small-pox, vaccination would prevent small-pox?—If vaccination were performed within 48 hours it would prevent it.

4688. And if done within another day it would ameliorate the disease, would it not?—Exactly; and if you left it another day it would have no influence whatever; that was the point which I endeavoured to explain to you.

4689. You stated just now, did you not, that you had never known vaccination to fail when it was well performed?—I did not say that; I said that it hardly ever failed when it was well performed; there are some very rare instances in which a child cannot be got to take the vaccination, as it is called, at the time; I usually do it again when there is a failure, and if the second time fails I recommend the mother to wait three months, and then it usually takes.

4690. I think the same question was also asked you with regard to re-vaccination?—Very likely; re-vaccination is not so likely to take as a first vaccination; there would be more failures.

4691. I presume that there may be certain constitutions in which re-vaccination would not take, however well it was performed?—Yes, we may presume probably that the constitution in such cases is under the influence of the former vaccination.

4692. Then those persons would be practically protected against small-pox, would they not?—If it were well done by good hands, and did not take, I should say that in all likelihood the person would not take small-pox.

4693. Mr. Muntz.] With regard to the question of fevers, in most cases of feverish attack, when the fever runs its course, there is a point, is there not, at which patients die of debility or exhaustion, unless any local inflammation takes place?—In some instances I suppose they do; they perhaps cannot take the proper quantity of nourishment.

4694. Would not that be more particularly the case in hospitals, where the poorer people are brought in in an indifferent state of health?—Yes. I look upon hospitals as a necessary evil; they are not places that I should recommend the sick to go to; I would recommend anybody who could afford to keep in his house not to go to a hospital.

4695. You mentioned that a good deal of the vaccination was done carelessly; do you not think that that accounts for many instances of vaccination failing to effect what we think it ought to effect?—No doubt.

4696. Do you think that the lymph which is used at the present day has the same power as the lymph had when Dr. Jenner first introduced it?—I am rather doubtful upon that point. I do not myself use it now; I have two other sources of lymph which I use, and which are more active than

than Jenner's lymph. Jenner's lymph has been running 50 or 60 years now.

4697. How do you produce this new lymph?—I explained the other day that one source was taken from a cow which a friend of mine inoculated with the virus of human small-pox. The cow took the disease, and then he collected the lymph from the cow, and introduced it into the human subject.

4698. Did that act as vaccination?—Yes, it does very well.

4699. It did not act like inoculation, did it?—Not at all; it did not produce any eruption, and it is not an infectious disease.

4700. Is not natural cow-pox found among cows still?—Yes. It was stated a few years ago by a gentleman who was investigating the matter, that it was found nearly every year in Somersetshire. Dr. Sanderson stated that he learned from the local medical men that it was nearly always to be found in the spring of the year, in Gloucestershire, where Dr. Jenner lived at the time when he introduced vaccination.

4701. You are probably aware that the plan is adopted in several foreign countries of keeping heifers and inoculating them for the purpose. If that were done in England, and vaccination were carefully performed instead of being carelessly performed, do you not think that that would have a very serious effect in preventing small-pox?—I think it would be a very good plan in large towns, but a heifer cannot be carried about in country places.

4702. But you can take the lymph about without carrying the heifer about?—You might. The second source of lymph which I mentioned was taken from a heifer such as you speak of, which was brought to the large vaccine station in London, and I vaccinated 13 children from the heifer two years ago next month.

4703. Was that heifer inoculated with real small-pox?—No, it was the cow-pox which was taken originally from a cow near Brussels. She had the disease in the natural way, not by inoculation, and this had been continued from heifer to heifer to the time I took the lymph for vaccination, without its being passed through the human subject.

4704. Then there would be no difficulty whatever, I presume, in procuring any number of animals inoculated in that way?—None. It is a very difficult thing to get them to take inoculation with human variola. A persevering Frenchman tried 89 without success, and with the 90th he succeeded.

4705. Has it occurred to you that we may attribute the present epidemic to a certain extent to the emigration of the French who have come over here?—We have had only about 10 or 12 patients in the hospital who have come from France, and the disease was raging to a great extent in the east of London before the French war broke out.

4706. Are you aware that the epidemic is worse at Southampton than at any other place in England?—I am aware of that.

4707. Are you aware that at Southampton the deaths from small-pox are at the rate of 18 per 1,000, and that the mortality from small-pox in Liverpool also is very great?—The mortality of Liverpool is almost always greater than that of any other town.

4708. You were asked a question as to the rate of mortality in the last century, and whether the

average of human life is longer at the present time than it was during the last century; what was your answer?—It is not any investigation of mine, and I cannot answer you from any personal knowledge; but the subject has been very fully and carefully and well entered into by Dr. Greenwood a few years ago, and it appears in one of the Parliamentary Blue Books. He found that with regard to human life, persons are now longer lived than they used to be, and that there is a larger number of persons who attain 80 or 90 years of age than there used to be a few years ago.

4709. I suppose the evidence of the insurance offices would prove that?—Partly, but it requires a very extensive investigation indeed to ascertain the fact.

4710. Mr. Holt.] If a medical man in private practice wanted a healthy arm for vaccination, do you suppose that he would have any difficulty in selecting one at any ordinarily large vaccine station?—It is a thing which we cannot very well sanction, because it would interfere so much with our own supply of lymph, if we allowed medical men to carry off the children whom we have vaccinated just for their convenience.

4711. But would there be a difficulty in finding amongst those children one sufficiently healthy to satisfy him?—I should think that there would be none whatever.

4712. Is the operation performed with as much care at the large vaccine stations as it is in private practice?—I should think with more care, probably because the vaccinator at the large stations has a better opportunity of selecting lymph for use.

4713. But he knows less of the children from whom the lymph is taken, does he not?—Just so, but we have fine children brought to those stations, and the lymph does better from a fine child than from a delicate one, just in the same way as if you put a withered grain in the ground you will not have such good produce as from a large full grain.

4714. You think there would be no difficulty in finding a healthy child for the purpose at the large vaccine stations?—No. Just at Christmas time there may be a difficulty, because the women will not bring their children to be vaccinated then, but, taking the year all through, in fine weather there would be no difficulty, speaking generally.

4715. I am informed that in St. Pancras there is one public vaccinator for a population of over 200,000, do you imagine that under such circumstances it is possible that the operation can be performed with as much care as in private practice?—Certainly. It is quickly done, and the children would in all likelihood be better vaccinated there than they would be in private practice. The vaccinator is always at it, and he would be more expert in performing the operation I have not the least doubt.

4716. Then you think that the poor who are compelled to have recourse to the public vaccine stations are not exposed to any greater risks than those who avail themselves of the services of private practitioners?—They are likely to catch other diseases from the children in the room, when the room is crowded, but that is the only risk.

4717. Mr. Candlish.] You have spoken of *corymbosæ* small-pox as very virulent, have you not?—It is very dangerous to life.

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Mr. Marson, 4718. There is a very mild form of small-pox, is there not?—Yes.
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5 May 1871. 4719. Is the ordinary small-pox something lying between those two?—There are three forms of it; the distinct, the semi-confluent, and the confluent. The *cerymböse* small-pox is generally classed as confluent, inasmuch as the patches are confluent. There will, perhaps, be one or two patches, or two or three patches on the body, of the size of the palm of my hand, where the spots are as thickly studded as they can possibly be; and in other parts of the body, perhaps, the eruption may be very thinly scattered; but those are very dangerous cases.

4720. Taking the two extremes of mild small-pox, and very severe small-pox, is there any difference at all in the nature of the disease?—I do not know that there is, except it be modified by vaccination. A very large proportion, 19 out of 20, I suppose I may very safely say, or still more than that, are killed by the amount of the disease which comes out upon the body.

4721. Would there be any difference in its nature at all?—No.

4722. The fact that when the disease becomes so exceedingly virulent, vaccination itself is no protection, is evidenced, is it not, by the figures which you have quoted?—They often have it severely, when they have been badly vaccinated, that is all. If they have been badly vaccinated, and have one little place which can be only just found, they will be very likely to have it in that severe form, just as if they had never been vaccinated.

4723. And the more punctures the better?—The more punctures the better, I should say. The Germans do it in a great many places. I had two Germans in the hospital at the same time, about a year and a-half ago. One had 11 good marks, and the other had 17 good marks. They had small-pox in the lightest form possible, and they were not with us more than a week. The disease having existed probably four or five days, as is usual, before admission.

4724. *Chairman.*] Can a patient catch this very bad form of small-pox from another patient who has the mild form?—Yes, that is unfortunately the case.

MR. WILLIAM GULL, M.D., F.R.S., called in; and Examined.

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4725. *Chairman.*] Do you hold any public appointment in connection with the medical profession?—I was Physician to Guy's Hospital for nearly 25 years, but I have retired for three years.

4726. Is there any other public appointment which you either hold now, or have held?—I cannot say that I hold a public appointment, but I examine, for the Civil Service Commissioners, the candidates who go to India, and that has a bearing upon this question of vaccination.

4727. Does your private practice give you great experience with regard to small-pox and vaccination?—Not so much as my former experience when I was physician to the hospital.

4728. When you were physician to the hospital, did the diseases of children come specially under your notice?—For several years they did, very specially; we had a children's hospital at Guy's, and it was for some time under my especial care, as well as out-patients under two years old. I also lived five years in the Lying-in Charity at Guy's.

4729. Taking your experience from both your public practice and your private practice, have you ever had reason to believe that any serious illness has been caused by vaccination?—I have never seen any serious illness caused by vaccination.

4730. Have you ever been consulted with regard to any patient suffering under serious illness in consequence of vaccination?—None, if I except the ordinary inflammation which sometimes follows the local irritation of vaccination.

4731. Have you seen any case in which life has been in danger from vaccination?—I have seen no one die from vaccination.

4732. Have you heard of any case of syphilitic infection in consequence of vaccination which you have reason to believe to be a true case?—Such cases are spoken of, but I have never myself seen a case. A case has very recently been brought before one of our learned societies, and even that at present requires investigation. I saw the president of the Medical Chirurgical Society yesterday, and I was asking

him what kind of evidence there was in that case.

4733. Is that the case brought forward by Mr. Hutchinson?—Yes; but that case is as yet *sub judice*. There is, I believe, sufficient evidence to show that there has been at least a presumption of such cases, though I have never seen any.

4734. It has been stated in evidence before this Committee that there are many cases not only in which syphilis has been caused by vaccination, but in which other diseases have been caused by it; have you ever heard of any other fatal disease being caused by vaccination?—I have never known any fatal disease to be caused by vaccination; but I have often known mothers who brought their children to the hospital say that the child has been covered with this eruption or that eruption since vaccination, and no doubt the fact was so; but I do not think that vaccination, *quasi* vaccination, had anything to do with it, because we know quite well that the state of the skin of children, and especially of the skin of children of the poorer classes, who are uncared for, is such that the slightest irritation of the commonest kind will set up what we call porrigo or eczema, and impetigo. An ordinary scratch will fester, as they say, and then it will spread over the skin in the form of one or other of those eruptions.

4735. But still that would appear as if the skin disease was the result of the wound inflicted by vaccination; have you found any serious consequences follow from that skin disease?—No, no more than what would follow from any other puncture in certain conditions of the skin; it is not as regards the vaccine virus, but as regards the mechanical irritation.

4736. The same thing would have followed from any scratch?—Yes, decidedly.

4737. That is a reason why the condition of the child should be carefully examined before such a scratch be made, is it not?—I am not sure whether that would be a hindrance to vaccination; I should think not, because I should think

think that the risk of getting small-pox would be much greater than the risk of irritation being set up by any casual scratch.

4738. It has already been stated that although no dangerous disease may be directly caused by vaccination, yet that a patient may be put by vaccination into such a condition of health as to be more liable to such diseases, for instance, as fever or lung disease; have you reason to believe that?—I should doubt it; I should feel very positive to the contrary, as far as my experience has gone. I have no sort of idea that the fact of vaccination would make a person more liable to affections of the chest or to fever.

4739. You have had a good deal of experience of lung diseases, have you not?—Yes.

4740. Have you ever had reason to believe that lung disease was either caused or accelerated by vaccination?—No, on the contrary, there was for some years, and I think there still is a lingering idea among the profession, that whooping cough can be cured by vaccination; and I know some very good evidence to show that at the spasmodic stage of the whooping cough vaccination has not only been successful, *quasi* the vaccination, but has acted as a derivative, and has sometimes seemed to relieve the spasmodic condition; I should not, however, lay great weight upon that.

4741. As regards the protection which vaccination gives against small-pox, have you a strong opinion?—I should say that vaccination was as protective as small-pox itself.

4742. Do you or do you not consider that the successful vaccination of a child is, reasonably speaking, a preservative against death by small-pox?—Yes, a very great preservative; it may not be an absolute preservative, because children have died with small-pox after vaccination; but if it be successfully performed in proportion to its successful performance, is the immunity greater and greater.

4743. Do you recommend more than one re-vaccination?—I should not like to express very positively an opinion about that; but I should think it certainly desirable after puberty to test the first vaccination.

4744. You would not do it, generally speaking, until that time?—No.

4745. If an epidemic were raging, would you do it before that time?—Yes, if the marks on the arm were not very distinct.

4746. In all cases in which you were the advising physician, would you recommend re-vaccination?—Certainly, I do recommend it; and I have advised the Government to have it put in their paper as one of the conditions for the candidates for India, that no man would be allowed to go to India without having marks of vaccination, and having received a medical certificate to that effect.

4747. Has your experience in inspecting those persons led you to form any opinion on the subject?—I should say upon the whole that vaccination is often imperfectly performed. So far as I have seen, among the 500 or 600 young men whom I have examined, the marks of vaccination are often indistinct.

4748. Those persons are from the middle class of society, are they not?—They are from the middle class of society. They are better vaccinated in Ireland. I think that the English are the worst vaccinated.

4749. You would be able, would you not, in

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most of those cases, to test your personal inspection by the account which the person inspected would give you?—I should examine the arm.

4750. But you would be also able, I suppose, to learn whether the person had been vaccinated?—I can learn whether he has been vaccinated, but I have to test whether the operation has been successful, by the condition of the cicatrix.

4751. Do you find in many cases that it has not been successfully done?—In many cases it has not been successfully done.

4752. In those cases have you been told that they have been successfully vaccinated as children?—Not successfully, but that they have been vaccinated.

4753. Are there many cases in which they have been informed by their mothers that vaccination has been successfully performed, and in which the marks have disappeared?—I could not give any evidence upon that point.

4754. Then in all those cases you recommend re-vaccination?—I not only recommend it, but it is a necessary condition that they should be re-vaccinated, and that I must have evidence of successful re-vaccination.

4755. Returning to the question with reference to syphilitic infection, I understood your answer to be that you did not like to pledge yourself theoretically as to whether it was or was not possible that syphilitic infection might result from vaccination, but that no case had come under your own personal knowledge?—Quite so.

4756. Could you give an opinion at all as to whether it was in the slightest degree probable that syphilis could be introduced into the person vaccinated from a child in which syphilitic poison had not externally developed itself, although it was within the system?—I should feel almost certain (but that is a matter rather of theoretical opinion) that the vaccine virus, if carefully taken from a vesicle, would not communicate any disease, and I give the Committee this curious evidence: there is perhaps hardly any disease, I do not say more infectious, but more contagious than small-pox. A child has been vaccinated in one arm, and inoculated with small-pox in the other, and whilst the small-pox has pervaded the body, and the child has fallen under the influence of small-pox by inoculation, the vaccine lymph has still perfected itself in the opposite arm, and a child has been vaccinated from that, and has not had the small-pox.

4757. But it had the cow-pox, I presume?—It had the cow-pox. That was a matter of careful observation by Willan, the great master on diseases of the skin.

4758. When you say that the virus should be carefully taken, what care do you exactly mean?—I should say that probably, theoretically, the blood might convey the infection of syphilis.

4759. Do you mean the blood of a syphilitic child in whom the syphilis was not externally evident?—Yes. I should not think much of the external evidence, because no doubt the syphilitic condition would pervade the whole body, though the local evidence might make it certain.

4760. Taking into account the theoretic possibility (upon which you do not seem to be positive), and the terrible nature of syphilis as a disease; and also taking into account the terrible danger from small-pox, and the protection which vaccination gives against it; would you consider that

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those facts or theories, with regard to syphilis, ought to have any effect upon the Legislature as regards their action in encouraging vaccination?—I have no doubt at all that the duty of the Legislature is to enforce vaccination, and I have no doubt at all that with reasonable care, whatever theoretical objections there are, the conveyance of diseases is practically not a fact; but that diseases are not conveyed by vaccination is a fact. I have never personally seen any, to begin with. Though I have been in this great city, and connected with one of the largest hospitals in the world, with 35,000 out-patients in a year, and though I have lived in Guy's Hospital for 15 years, and have had to do with the out-patients, I never saw a case in which disease had been conveyed by vaccination. I have heard of such cases, but I never saw them; so that I have a theoretical conception of them, but no practical knowledge of them. My knowledge of the poor of London is great. I lived for 15 years in the hospital, and during five of those years in the Lying-in Charity, and I had an opportunity of seeing those people in all the conditions of poverty. We had a regular day for vaccination, and my experience and knowledge are plainly that I do not know of diseases being conveyed by vaccination. I hear of these syphilitic cases, but I have no knowledge of them.

4761. I suppose you would consider that at the present time a very large proportion of the population of London and of England generally are vaccinated?—I should think so; but I think vaccination is very carelessly done, as far as I have noticed.

4762. In what way do you account for the prevalence of the present epidemic, notwithstanding the extent to which vaccination has been practised for several years past?—The probability is that on the whole the vaccination had been badly done. In other countries vaccination has certainly been very much better done than in England, and indeed it has long been a sort of opprobrium to England that we who had first drawn attention to vaccination, and had, so to speak, invented vaccination, were the worst vaccinators. In Germany and Denmark, for instance, it is very much better done, whereas in England it is very often carelessly done.

4763. What do you mean when you say that it is carelessly done?—In the first place the children have never been watched to see that the vaccination has been properly effective. Children should be brought for inspection at the end of the week. The common people think that if inflammation follows the scratch, that is a sign of the success of the operation.

4764. Are you aware that great pains are now taken in the public vaccine stations to see that the operation is properly and successfully performed?—Yes. I am perhaps rather speaking of what my own knowledge was when I was connected with Guy's Hospital.

4765. Do you know at this moment whether the prevalence of small-pox is greater in proportion among adults than among children?—I was not aware of the fact. As to the prevalence of the present epidemic, the whole history of medicine shows that there are at certain times known conditions which favour the spread of epidemics.

4766. Has your attention been called to the fact that notwithstanding there is an epidemic of small-pox raging in London, the general mor-

talidity of London has not been very much increased?—Yes.

4767. Is it not the case that in former times when there has been a virulent epidemic of small-pox, and no vaccination, that epidemic has produced a marked effect upon the mortality?—An enormous increase.

4768. Would it not be a fair deduction from that, that if we had not had the protection of vaccination, whatever it may be worth, the present epidemic might have resulted, and probably would have resulted, in a very great increase in the mortality?—I should expect that it would have resulted in a perfect pestilence. That is the idea that I should have from former histories of small-pox, because the history of small-pox is very large, extending over hundreds of years. We have the history of small-pox in India and China, and in many cases its effect has been perfectly depopulating. The mortality from small pox, when the disease has appeared among populations who were unprotected, either by inoculation (which was one of the Eastern methods), or by vaccination, has been something terrific.

4769. Should I be right in feeling that any person who discouraged vaccination in the country might be incurring the responsibility of bringing upon the country such a pestilence as we have heard of in times of plague, and in the worst times of small-pox?—I assure you that I cannot realise to my own mind the danger which would be incurred from being careless in this matter. With the present state of society, our crowded towns, and the constant intercommunication of the people, it seems to me that to neglect or discourage vaccination would be much the same thing as to take a firebrand and push it into an arsenal of gunpowder. That is the feeling which I, with my medical knowledge and experience, should have. I certainly should not let my own family for one instant be free from the careful help of vaccination, and I may say further that, not knowing all that is going on, I took occasion with one of my friends to print a little paper to be distributed among the poor in order to encourage vaccination. My life, until within the last few years, was spent in a great hospital, and among the poor people. I cannot imagine anything so dreadful as an unprotected population with small-pox amongst it.

4770. You are probably aware that several persons (doubtless from a strong conviction, whether we may think it well founded or not) are opposed to vaccination, and do their best to get other persons to hold the same belief, do you or do you not find that the result of that agitation has been to cause some of the poorer population to disbelieve in vaccination?—Certainly, and that was the reason of my publishing this little sheet of paper to be distributed among the poor people, though it is anonymous.

4771. I need hardly ask the question, but, in addition to the great danger to life from small-pox, it is the case, is it not, that there is no disease which leaves more effects upon patients, even if they do not die of the disease?—It is quite true; it disfigures and maims them.

4772. In fact it may be said, may it not, that the wounds inflicted by small-pox are almost the worst of the wounds inflicted by disease?—Yes; and those cases are, of course, more in number than the deaths.

4773. You have had a great deal of communication

cation with other members of the medical profession, both in England and on the continent, have you not?—Yes.

4774. Do you know any medical practitioner, who is generally believed by his profession to be of standing, who either disbelieves in vaccination or thinks it mischievous?—I do not.

4775. It has been stated by some of the opponents of vaccination that the danger of discouraging it would be limited to the person and the child of the person who disbelieved it, and did not practise it or submit his child to it; without entering into the question of how far the State ought, for the protection of the child and for the preservation of its life, to interfere with the primary right of the parent, I should like to know your opinion as to whether the health of the community generally would or would not be likely to be dangerously affected by making the parent the sole judge in this respect as regards his child?—I think that it would be dangerous, because you would have, if I may so say, an explosive material about you at all times; people unvaccinated, and therefore, as I think, unprotected, would be more likely to have small-pox, and to become the foci of the poison.

4776. The reply that is made to that is, that all those who believe in vaccination would be vaccinated, and that the number of the unvaccinated would be limited to those who had this conviction or this prejudice (whichever you like to call it), and that consequently the health of the general public would not be endangered; do you consider that to be a sound argument?—Still I should think it undesirable to have in society persons who are quite unprotected; and I should think that has been one of the dangers of the present epidemic.

4777. That would be a danger which would arise, I presume, in a measure from the fact that, although vaccination is a very great safeguard, it is not an absolute protection against small-pox?—Precisely.

4778. Dr. *L. Playfair*.] It has been stated in evidence before this Committee that at least 2½ per cent. of the population of London are unvaccinated; that would amount to upwards of 80,000 persons; would you suppose that there were in London itself 200,000 or 300,000 others who were carelessly and improperly vaccinated?—That would be pure conjecture on my part.

4779. But if 80,000 persons were totally unvaccinated, there would be a considerable number of others, would there not, who were not fully protected by vaccination?—I should think it likely.

4780. The deaths from small-pox, up to the present time, do not, I think, much exceed 5,000; is that a very large number for a city like London, in comparison with the epidemics of small-pox of the last century?—Certainly not. I think that we read of 100,000 people dying of the disease in the epidemics of small-pox, and I am not sure that it is not double that number. The thing is something fearful. I hardly like to trust myself as to numbers, but when I was a professor of medicine at Guy's Hospital, I brought those numbers before my class, and I was astonished, when I investigated the subject, at the enormous number of deaths in small-pox epidemics. I remember this particular remark being made, that, taking all the deaths which had occurred in the wars of the first Napoleon, not so many had died by any means as the number of lives which had

been saved by vaccination at that time. Comparing the condition of life then with the epidemics which had gone before, those devastating wars had not killed nearly so many people as vaccination had saved. I do not remember, at the moment, the authority for that statement, but I remember that that was the kind of evidence that I had to bring before the class.

4781. You mentioned a striking experiment that was made by inoculating and vaccinating respectively the arms of the same patient; are you aware that direct experiments have been made in some hundreds of cases, of taking vaccine lymph from syphilitic patients, and purposely vaccinating other children with the lymph, and that in those cases, at least where the direct experiment was tried, syphilis was not engendered?—Quite so. There were some old cases too in the time of Jenner; because this difficulty, as to syphilitic infection, arose at that time, and was then fully investigated. The great Hunter, who was very much interested in the question of syphilis, maintained that syphilis could not be conveyed by those secretions.

4782. And, therefore, if there are some cases (and there certainly are some asserted and recorded), it must be a rare combination of circumstances, must it not, which produces the result when direct experiments have failed?—So rare, that my experience does not supply me with an instance; and those last cases which have recently occupied medical attention in London, I think, require further investigation. There does not appear to be a clear case.

4783. Mr. *Muntz*.] You have been asked whether vaccination always prevents small-pox; is not well-performed vaccination as great a preventive of small-pox as having had natural small-pox?—Yes; that was the answer I gave. I should say that vaccination is as protective as small-pox itself.

4784. I think you said, that your attention had been turned a good deal to vaccination in foreign countries?—Not directly; but as a professor of medicine, it was my duty to inquire into this matter, and to teach the class as to the conditions of it.

4785. Have you taken any interest in the manner in which vaccination is performed in Germany?—I have taken some interest in the question of vaccination and re-vaccination in the Prussian armies.

4786. Have you ever drawn any comparison between the proportion of vaccinated cases in England, afterwards attacked with small-pox, and the proportion of vaccinated cases, in Germany, afterwards attacked with small-pox?—No.

4787. Sir *S. Child*.] Sweden and Norway are said to be the best vaccinated countries, are they not?—Yes; and Denmark.

4788. Vaccination is compulsory, I presume, in those countries?—I think so.

4789. The age fixed in the Act for the vaccination of a child is three months; do you think that that might be extended to a later period?—I should think, that if the whole community were protected by vaccination, probably it might be extended, if there were any practical reason for it. I should think, that a child up to the age of six months might be very well considered fairly safe from these diseases; but I do not know of any practical reason why the time

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should be extended. A child three months old might be safely vaccinated.

4790. Are you aware that, unless the child be suffering from some disease, the parents are liable to a penalty if they do not have it vaccinated when it is three months old?—I know they are.

4791. You think three months is a reasonable time?—I should think it is a fair time.

4792. Mr. Holt.] In continuation of a question which was asked by the Right honourable Chairman, would you recommend that care should be taken as to the health of the child from whom the lymph was drawn for vaccination?—I should say yes, certainly; not that I believe that the vaccination would convey diseases, but rather from the existence of a kind of prejudice in one's mind that one would not like to offend the parents by bringing forward a sickly child for vaccination. I do not know any other reason for special regard being paid to the health of the child.

4793. Do you think that ignorance as to the child from whom the lymph was taken, and its parents would add to the risk to which the child to be vaccinated would be exposed?—I do not think I could say that it would.

4794. You do not think then that at large stations, where the operators must necessarily be ignorant as to any hereditary disease to which the child from whom the lymph was taken might be liable, the children of the poor are exposed to any greater risk than those children who are vaccinated in private life?—I think not. The medical man would probably select the best and healthiest-looking child, from a common sense point of view, but I do not think that, from a scientific point of view, such a precaution is of extreme importance.

4795. I understood you to say, that it was an important element in the operation that the lymph should be carefully taken?—I would not say that it is an important element, but it is so far important as avoiding the theoretical possibility of communicating disease, and avoiding also the dilution of the lymph.

4796. Did I understand you to state that it is often carelessly done?—No. I think the carelessness consists in not bringing the children a second time to see that the process is natural and effective. It is not enough to vaccinate a child, but the child should be inspected at the end of the week, to see whether the vaccination has been successful. The life of the vaccine vesicle is very curious. The true lymph should be taken before the inflammation appears; for the common process of inflammation dilutes the lymph, and to that extent spoils it.

4797. Are you able to state from experience with regard to the practice at large vaccine stations, whether the operators are generally skilful?—I think our public vaccinators are certainly upon the whole very skilful. Their experience is very large, and their means of performing the operation are very easy; they sit and have the children brought to them.

4798. Are they generally careful in the selection of healthy children?—I should think they are generally so. In a large hospital where an enormous number of patients come day by day, we should have the thing multiplied upon us if there was any carelessness. All the admissions which I have made are merely theoretical admissions.

4799. You refer simply to your own observation, and that observation only extends, as I understand, to the vaccine station at the hospital?—I have no knowledge of public vaccine stations, except as regards the hospital.

4800. Mr. Taylor.] You have a very strong opinion as to the protective character of vaccination as against small-pox, have you not?—I think it is as protective as small-pox itself.

4801. Would you say that it was more protective in regard to the severity of the attack, or in regard to the number of attacks?—Both; but especially in reference to severity of attack.

4802. Is it not disappointing to those members of the profession who hold that opinion to see the very large mortality now going on from small-pox?—I do not think the mortality is large when I consider that we have 3,000,000 people in London alone, and that there is such free intercommunication among the people; on the contrary, I am astonished at the smallness of the epidemic.

4803. It has been stated in evidence before the Committee that in the pre-vaccinatory period the deaths from small-pox were 3,000 per million of the population on an average in a series of years; are you aware of that fact?—I have no knowledge as to that.

4804. You are doubtless aware, nevertheless, that for some months the deaths from small-pox in London have been even higher than 3,000 per 1,000,000?—Yes. This is a very remarkable epidemic. All epidemics raise the average very much, and often in a very extreme way. I think we ought to have the average of the years.

4805. I presume that the only way of judging whether an epidemic is a severe one or not, is from the number of deaths which take place during its prevalence?—Yes, I think that would be fair.

4806. So far, therefore, the fact of a large mortality may be logically attributed either to the comparative valuelessness of vaccination, or to the severity of the epidemic, may it not?—Yes. One curious point that I should like to mention with regard to the severity of the epidemic, is that when an epidemic of small-pox prevails there is at the same time a greater susceptibility to the vaccine process, so that persons who in ordinary non-epidemic times are insusceptible of the vaccine irritation, are during epidemic years of small-pox very apt to take the vaccine process, which shows that there must be some remarkable and abnormal condition of all our bodies during an epidemic over and above the mere actual contagion or infection of small-pox. I believe that that is universally admitted.

4807. In ordinary times there is apparently great uncertainty as to the capacity of communicating cow-pox?—There is a variable susceptibility no doubt.

4808. Is there a considerable difference upon that point in the medical profession?—I think the experience of the medical profession is that there is a variable susceptibility to the vaccine virus.

4809. We have had it in evidence this morning from Mr. Marson that he has hardly ever at his two institutions found any difficulty in producing the vaccine disease; what remark do you make upon that?—There is no greater authority than Mr. Marson that I know of.

4810. You

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4810. You mentioned, did you not, in answer to the Honourable Member for the University of Edinburgh, starting from the hypothesis that there are in London 80,000 persons who are absolutely unvaccinated, that there is a mere possibility or probability that there may be 300,000 persons in London more or less entirely unprotected by vaccination?—Yes. I have not the least notion of the numbers, nor have I even thought of the question from that point of view.

4811. The Honourable Member mentioned that there had been 5,000 deaths during the present epidemic I think?—Yes, the Honourable Member mentioned that number.

4812. Assuming the number of deaths to have been 5,000, I presume that the number of attacked has been at least 100,000?—As to that I have no knowledge.

4813. We have it in evidence that the proportion of deaths from small-pox to cases amongst those who are well vaccinated, is under 1 per cent.?—Yes, under 1 per cent.

4814. It would be a low average therefore, would it not, to imagine that 100,000 persons had been attacked for the 5,000 or 6,000 who have died?—These are altogether theoretical numbers, which I have not before me on paper, and as to which, therefore, I could only answer at random.

4815. You stated, did you not, that you thought that the present attack was in regard to the mortality in London, a mere trifle as compared with those epidemics which are historical?—The historical epidemics were certainly more severe.

4816. Have you any idea of the proportion of attacks to population in any such bad epidemics as you have referred to?—I remember some such expression as this, that in France, where vaccination is very badly done, before vaccination they for years lost a quarter-of-a-million people a year from small-pox.

4817. Would not one in three of the population be a very large number to be attacked?—That I could not say; I have not prepared myself with the numbers, but the general impression upon my mind is that a quarter-of-a-million of persons died in France from year to year before vaccination.

4818. Are you aware that there is a considerable opinion amongst many classes in this country against vaccination?—I do not think that there is a considerable opinion against vaccination amongst many classes.

4819. Amongst the working classes?—I would not even say amongst the working classes; and I have had a great deal to do with the working classes.

4820. Is that a new prejudice (as you would consider it) on their part?—I think so. I may say that I have had much to do with the poor of London. I lived for 15 years in Guy's Hospital, I ate, drank, and slept there; my whole life during these 15 years was spent there, and five of those years I passed in the Lying-in Charity of the hospital. During that time I attended the poor people in their houses, and I did not meet with any opposition to vaccination. Indeed, from my experience I should say that upon the whole the masses of the people would rather be vaccinated.

4821. Have you heard that there are a number of persons who quote what they believe to be the injurious and even fatal effects of vaccina-

tion upon their families?—Yes, I have heard such cases quoted, but I never saw them, except that I have known mothers bring their children with rashes on their bodies, and say: "Sir, this is since vaccination;" and then when the matter was inquired into, we found that those eruptive appearances were common rashes which spring up in children independently of vaccination, as might be the result of a little scratch which festers. Children are very liable to eruptions on the skin, especially among the poor; and if those eruptions follow vaccination, people are very apt to think that the vaccination may have caused them; it may have done so as a mere common irritation, but not as conveying any special disease.

4822. The opinions which you have expressed are, I believe, the opinions of the great majority of the medical profession?—I think so.

4823. There are, nevertheless, considerable exceptions, are there not?—I do not think that there are considerable exceptions; I could not say that I know of one considerable exception.

4824. Do you know Dr. Collins by reputation?—I do not.

4825. Have you read Dr. Nittinger's work on vaccination?—No.

4826. Do you know Dr. Bayard, of Cirey, in France, by reputation?—I do not.

4827. Do you know Dr. Verdé de Lisle, of Paris?—I do not.

4828. Have you heard the name of Dr. Ricord, of Paris, as a man of great eminence in his profession?—He is a man of great eminence in his profession.

4829. Are you aware that he has changed his opinion as regards the advisability of vaccination, on account of the proved communicability (as he considers it) of syphilis and other diseases by vaccination?—I did not know that he had.

4830. You are not aware of the statement which Ricord made in 1862, that if he were convinced in any one case of the communication of syphilis by vaccination, he would consider that the system of vaccination should be given up, "since in the present state of science we are in possession of no criteria which may permit the conscientious practitioner to assert that the lymph with which he inoculates is perfectly free from the mixture with tainted blood." If he said so (which I did not know) I should think it was a very hasty conclusion, I confess. I never knew a case of syphilis having been communicated by vaccination, and surely I ought to have had an opportunity of seeing such a case if it often occurred, having children constantly before me. I was physician to the Children's Hospital, at Guy's, and had none but children under my care for two years, and I never saw such a case. But even assuming the practical possibility of disease spreading in that way (there is a theoretical conception of it), I do not think that should militate against the advantages of vaccination as I know them. With our present knowledge I should think it the most insane thing that any human creature could think of to give up vaccination. It would seem to me just as if we were going to throw ourselves back, merely because we had a theoretical conception that vaccination was injurious in one or two cases which I have no practical knowledge of. Having studied medicine in London for 35 years, and seen all sorts of people, from Bethnal Green to Kent-street and Tooley-

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street in the Borough, to the extreme West, I cannot conceive of a population falling into so great an error as not to avail themselves of the advantages of vaccination.

4831. Mr. *Candlish*.] You have referred to Norway as a place where vaccination is compulsory and successfully practised, have you not?—I do not know about its being compulsory, but I think it has been successfully practised. I only know in a general way that Norway, Denmark, and Sweden are generally quoted as very well-vaccinated countries.

4832. Are you aware that it is stated in a blue book, which was laid before Parliament in 1857, compiled, I think, by Mr. Simon, from information gathered by him, that in Norway a committee to whom certain questions as to vaccination were referred, reported that they did not hesitate to recommend that vaccination should be deferred until school-time begins?—I am not aware of it.

4833. Would you concur in that recommendation?—I think I should not concur in that.

4834. I have mentioned this, inasmuch as Norway is a country which you have quoted as affording a good example of the way in which vaccination should be performed?—I have no more knowledge on the subject than general report. I have no practical knowledge of the Norwegians.

4835. You would slightly alter your estimate of their mode of administering vaccination, I presume, if that be their practice?—I think I should object to the delay.

4836. You consider, do you not, that the vaccine lymph will convey no disease, except the vaccination disease?—I think that pure vaccine lymph only conveys vaccine virus.

4837. Will it therefore be of any moment whether the child from whose arm the lymph is taken be healthy or unhealthy, diseased or undiseased?—Theoretically I should say that it would be of moment, and practically I have no knowledge that it would; as I said just now, it would be rather a matter of public prejudice and common sense.

4838. You spoke of the possibility of the lymph being spoiled after its introduction into the arm by its being acted upon by surrounding inflammation; at what time after vaccination would you take the lymph from the child?—I think that the vaccine vesicle is perfect at about the end of the week, on the eighth day; lymph has been taken later, and it is in some countries taken later.

4839. If there was surrounding inflammation would you rather defer the taking of the lymph?—I would decline the case.

4840. What would be the injurious effect of taking the lymph when there was surrounding inflammation?—It would throw two elements of disorder into the case; in the first place it would dilute the lymph, and it would throw into it the elements of common inflammation; so that you might, if you vaccinated from such a child, cause what is called pyæmia.

4841. Would any other constitutional disease in the child from whom the lymph was taken, be conveyed by lymph so taken?—I could not be sure, but I should doubt it, unless blood was mixed with it.

4842. You think that blood might be mixed with it?—It might be mixed with it.

4843. Would blood, if mixed with the lymph

in quantities, though minute, yet capable of conveying disease, be observable to the eye of the operator?—I think it would.

4844. To put it shortly, might blood be there unseen?—Yes; you might theoretically, have a corpuscle of blood that would be unseen; you can only see blood, practically, when you have enough blood mixed with the lymph to give it colour.

4845. Would a very minute portion of blood in the lymph convey disease?—I have no knowledge of such a thing, but I can conceive that it is possible.

4846. You expect that if syphilis has been conveyed by vaccination it must have been through the admixture with the lymph of something besides the lymph?—I should think so, but I doubt the transmission of syphilis by vaccination; I think that if such a thing occurred, with the enormous opportunities which I have had, I ought to have had children with syphilis resulting from vaccination over and over again under my care, and I have never seen it; that is a remarkable fact.

4847. Are you aware that the transmission of syphilis by vaccination has been pretty fully established in France, and on a very large scale?—I do not know that; you must always trace the history of those children to the parents, and there may be other sources of syphilis besides vaccination; it is a very difficult matter to investigate.

4848. You are also embarrassed, I think, by the fact that there are imperfect operators?—Not so much imperfect operators as imperfect observation to see whether the vaccination had succeeded; the parent is satisfied to take the child away, and then to take no further step to ascertain whether or not the vaccination has been successful.

4849. Do you think that at present that is a larger obstacle to our ascertaining how far the vaccination has been successful than the incapacity of the operator?—I should think so.

4850. But you recognise the fact, I presume, that there are imperfect and inefficient operators?—I dare say there is incapacity as regards the operation; it is impossible to have a large number of men, I take it, without incapacity; but I should not think the incapacity is widely extended.

4851. With the chances of impurity in the lymph, with the chances of imperfect operators, and, together with those considerations, the aversion of a section of the public to vaccination, how would you secure universal vaccination by the operation of the law?—I think that living as we do in society, the duty which a man owes to his neighbour is to give up as well as to take; and as we all take very largely from society, we must, for the benefit of society, give up something of our own individual prejudices, if the whole mass of evidence goes in favour of a certain line of action.

4852. But first of all, you do not secure perfect operators; secondly, you have not a guarantee for perfect lymph; and thirdly, even if those conditions were complied with, how would you get over the objections of those who still objected?—I do not think that the objection is of a different kind from an objection to swallowing one's food. I should doubt whether more children do not die from being choked in swallowing their food than die from vaccination; I know

know that I have seen more children choked by swallowing their food than I have seen dying from vaccination. Practically the objection against eating would be exactly the same in kind as the objection against vaccination.

4853. That would be parallel, perhaps, to the imperfect lymph and imperfect operators, but still there remains the resistance of the objector; how is my child to be vaccinated if I will not obey the law as regards vaccination?—That must be for the policeman.

4854. Would you take my child by force and vaccinate it?—I certainly would; just as I would take an ignorant child and have it educated.

4855. Would you take it from the arms of father and mother, and have it vaccinated?—I certainly would. I do not think that a parent has any more right to bring up his children in danger to society in one way than in another. I think the individual right of a person merges a good deal in the rights of society, because, in this case, the individuals are great gainers.

4856. But you will concur with me, I presume, that the extent to which you must sacrifice a man's parental rights must have its limits?—Certainly. The limit of a man's rights is when the exercise of those rights becomes dangerous to another.

4857. You recognise the fact of course that there is very much small-pox at present?—There is now epidemic small-pox.

4858. Do you attribute that to imperfect vaccination?—Not altogether. I attribute it also to the speciality of the epidemic: that curious fact, which we can hardly account for, that there is a greater liability to this process at certain seasons than at others.

4859. Then at those seasons you do not consider vaccination to be a protection?—It is a protection, but not so great a protection as if there was not this special liability to the disease.

4860. Except at those particular seasons, do you think that vaccination is a perfect protection?—It is not a perfect protection, but it is as much a perfect protection as small-pox itself would be.

4861. Then, speaking in general terms, none of the vaccinated would be exposed to the risk of taking the disease from the unvaccinated?—Yes, they would be more liable. Supposing incendiarianism abroad and that I am of inflammable material, but not very inflammable, I may go about pretty safely, but suppose there is a very inflammable material near me, I may take fire through it. I had better make that material less inflammable, and then I shall be less liable to take fire, and with that object you become vaccinated, and are then not very inflammable. The unvaccinated, who are, so to speak, very easily inflammable, become dangerous to society.

4862. Then nothing that we can do in vaccination is a perfect protection against small-pox?—There is, speaking in the same terms, an amount of inflammability remaining still, but we can lessen the susceptibility.

4863. And to obtain that result you would take the child by force from its parent?—I would when you consider the awful and fearful results which followed small-pox before we had that lessened susceptibility. To my mind vaccination represents a very much lessened susceptibility to small-pox.

4864. Are you aware that there is an epidemic of small-pox now in Holland?—I have not much

special knowledge of the state of the epidemic at this moment.

4865. Are you aware whether the Dutch are generally vaccinated by force of law?—I do not know personally.

4866. You also recommended re-vaccination after puberty, did you not?—Yes.

4867. Have you known unsatisfactory results after re-vaccination?—You may get a common inflammation, which is called pyæmia.

4868. Have you known erysipelas to occur after re-vaccination?—I mean that; it is a sort of pyæmic disease.

4869. Have you seen death resulting from it?—I have not seen death resulting from it, but I know that it has occurred. It occurred in the case of Sir Culling Eardley, I think. It is so rare that I have not seen any case, but then Sir Culling Eardley would probably have died of any injury, it might have been of a tight boot. People do die of a little scratch; that is a mere accident like a spark to gunpowder.

4870. The chances of risk are so small that you would run the risk for the sake of the benefits; is that so?—Yes, I think the chance of risk is infinitesimal.

4871. Does effective vaccination depend in some degree upon the number of punctures?—The effect upon the body does seem to depend upon that. That is rather a curious fact, which we owe to Mr. Marson. I have no other knowledge of it than I have obtained through his most remarkable papers. It appears that when people are admitted into the Small-pox Hospital, as Mr. Marson has told the Committee, they enter in a book the number of cicatrices, and in the course of years, looking over those entries, they find that the people who have three or four well-marked cicatrices go through the disease easily.

4872. Would you prescribe the number of cicatrices by Act of Parliament?—I think I should feel disposed to do so.

4873. Then Dr. Jenner was all wrong when he said that one was sufficient?—Very likely.

4874. We have learnt something since his time?—Yes.

4875. And you expect that we may learn something more in the next 50 years about small-pox?—I hope so.

4876. If we had legislated on Dr. Jenner's theory we should have been legislating contrary to the actual facts, should we not?—We must legislate to the best of our knowledge, and when we have better knowledge we can improve our legislation.

4877. Should we found positive law on mere opinion?—It is not positive law; it is legislation for the time being; positive law lies in the nature of the case; this is a statute for the time being, but it may be altered as our knowledge of the facts increases.

4878. It is a statute which gives positive direction, is it not?—For the time, as I do to my own family.

4879. Then would you enforce it, although you admit the possibility that you are enforcing an error?—Yes; I advise my children to the best of my knowledge, but I will not be sure that I might not have to alter that opinion.

4880. But you are a law unto yourself; would you leave the law in the same position as regards other people?—Certainly, until evidence went against it; some singular change might come

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over this earth, and there might be no small-pox, and then we should not want vaccination.

4881. Mr. Cave.] Every action of life is determined by a balance of probabilities, I suppose, is it not?—Certainly; there is no *a priori* knowledge to guide us in life that I know of.

4882. I see in the last return of the Registrar General a statement that out of 2,185 cases of small-pox 1,212 have been returned as unvaccinated and 973 as vaccinated; is not that a large proportion of vaccinated cases?—Yes, but we ought to know how they had been vaccinated, because that does not at all correspond with the Small-pox Hospital statistics, where the observation is careful as to the kind of vaccination; that report, to be of use, ought to state what marks of vaccination the patients had in their arms.

4883. Would you say that those 973 might almost have been said not to be vaccinated?—I should say that most likely many of them were not well vaccinated.

4884. Have you seen much of the evidence which we have taken?—No, I have seen none of the evidence at all.

4885. There seems to have been a large number of cases brought before us in which there was apparent evidence of cancer, and what is called “rotteness” and holes bursting out in children after vaccination; what would be your opinion on such cases?—What I said to the Committee just now is to be very much borne in mind, namely, that children are very liable to skin diseases at all the early periods of life, especially amongst the poor.

4886. But this seems to be something beyond that?—That is just what I said that I have no knowledge of. As to those holes, for instance, we have very large experience of what is called “holes” in children, and they very much occur in Irish children; in ill-fed children. It is called the “burnt hole,” and it has nothing to do with vaccination whatever. That is as certain as anything of which we have any knowledge in medicine. What is called *rupia* is very common indeed among ill-fed and ill-nourished children in crowded districts. So as to cancer; cancer is a disease which is very little known in young children, and when it occurs it takes a particular form, and we have not been able, after the greatest care, to form any opinion as to the communicability of cancer in any way.

4887. Would you say the same with regard to leprosy?—Leprosy does not occur in this country, except very rarely. There are a few isolated cases of leprosy, but it is a disease very much confined to the sea coasts, and certain districts in Norway, in the West Indian Islands, and in some parts of Spain; but leprosy is not a disease known here. What is called leprosy in this country is *lepra vulgaris*, a scaly condition of the skin.

4888. Have you any knowledge of leprosy in the West Indies?—Yes.

4889. We had evidence the other day, that leprosy was spread, in the West Indies, by vaccination; do you agree with that?—I think that if the Committee will call for the report of the College of Physicians, in reference to leprosy, which was drawn up some years ago by a committee of which I was a member, they will see that we came to no such conclusion. The whole of the evidence which we got, as to leprosy of the West Indies, was that it depended for the

most part upon damp, ill-ventilated localities, and the bad food of the people. The thing was gone into by the committee of our college very largely, and the report was published.

4890. Did the committee decide whether leprosy had diminished or increased of late years in the British Colonies?—It had increased in some of them.

4891. Was not one of the causes the feeding of the slaves in old times upon salt provisions almost entirely?—Yes, and upon fish.

4892. One would imagine then that after emancipation leprosy would have diminished?—Yes; but I do not remember sufficiently to be able to inform the Committee with exactness as to those points.

4893. Another statement has been made that the teeth of the rising generation are much worse than they used to be, and that that has been caused by vaccination; what is your opinion as to that?—I have heard it equally referred to the high preparation of our food, whereby the teeth are becoming useless.

4894. Is it a fact that the teeth are worse than they used to be?—I do not know; they say that in America they are, and that is why dentists prevail so much there. They say also according to the Darwinian theory that teeth will become useless, and that we shall not have any teeth at all, because they will become organs which by the high preparation of our food we shall not want, so that these are theories in another sense.

4895. English cookery would have to improve a great deal before we could do without teeth, I presume?—Yes; but I have no idea that it has anything to do with vaccination.

4896. Should you say that the constitutions of people generally are weaker than they used to be?—I should think not. That has been tested in many ways by trying the strength of the most civilised nations against savages, and the civilised people have always come out first. Our English soldiers were tried in New Zealand against the natives, who are a very fine race, but the English soldiers beat the native New Zealanders in every trial of strength.

4897. It is a common opinion, is it not, that we are weaker than our ancestors?—It is, but like all common opinions it is worth what it is worth.

4898. Mr. Candlish.] Including the common opinion with regard to vaccination?—That is not the question of a common opinion, but the question of a result arrived at by common experience.

4899. And therefore a very common opinion?—That may be.

4900. Mr. Cave.] Have you seen many instances of small-pox after small-pox?—Some; we have had a striking case in this epidemic in this town which may be known to Honourable Members of the Committee. A gentleman having had small-pox when a young man, and died of small-pox very late in life I was inoculated for small-pox when I was very young, and still feel so safe in dealing with small-pox, as if I had an immunity from it. Experience has shown that you may have small-pox after small-pox, as you may be vaccinated without its being any protection against small-pox, but those are rare cases.

4901. Has there not been a peculiar liability in this epidemic which has not been known before?—I do not know that it was not known before.

before. It may have shown itself in greater intensity.

4902. Would you consider this as being an epidemic not unusual in anything except virulence?—Only in severity. I think that there are no new facts, or at least I am not aware of any.

4903. *Chairman.*] You mentioned pyæmia; is it generally a fatal disease?—Pyæmia is a disease which varies very much. It may arise from a mere irritation of the skin of a local kind. One of our most distinguished surgeons, Mr. Paget, has just recovered from it in its most intense form. The irritation of the arm following vaccination is not usually severe.

4904. *Mr. Alderman Carter.*] The Honourable Member for Sunderland asked you if you are aware that in Norway vaccination was recommended to be deferred until school time; are you aware that they also recommend that when small-pox is epidemic, vaccination should take place in the earliest months of life?—I was not at all aware of those restrictive rules in Norway, but I said at the time that I was not prepared to defer vaccination until school time; I should think practically that the age of three months was a very proper time.

4905. *Dr. Brewer.*] Are there not certain populations in certain districts more susceptible of small-pox than others; do you conceive the negro population, for instance, to be more susceptible than populations in the more temperate climates?—In hot climates there is greater susceptibility.

4906. In hot climates have you noticed that vaccination is equally as powerful in preventing small-pox, as it is in the more temperate climates?—I could not say absolutely that it was, but my impression is that it is as great a preventive; so much so that the natives of India are very glad to have it performed. The native princes of India, for instance, have their children protected by vaccination.

4907. Do you know anything of vaccination in Copenhagen?—I only know generally that it is very successful.

4908. Do you know generally what was the state of Denmark, as regards small-pox, before vaccination was vigorously carried out?—There are some very special statistics about vaccination in Denmark. The number of deaths from small-pox was very high, and in the whole of the Danish dominions I believe that nearly the whole of the disease was stamped out. That took place at the beginning of this century.

4909. And that immunity from small-pox gradually subsided after the year 1825, did it not?—I think it did.

4910. Subsequently, when vaccination was relaxed in Denmark, did small-pox again attack the Danish people, and take off much life?—I believe it did, but I do not know.

4911. Irrespective of sanitary improvements, do you conceive that the mortality from small-pox will be the same, if a population is unvaccinated, as if it were vaccinated?—The mortality would increase, no doubt.

4912. Have we evidence of it?—No; but drawing the fair conclusion from what the mortality was before vaccination, I think one cannot doubt it.

4913. What is the best way to test a well-performed and successful vaccination?—There

have been certain tests suggested, such as to re-vaccinate, on the fourth or fifth day, to see if the second vesicle would catch the first, and if there was any special reason in any particular case, it would be well to do that. But for the mass of the population it would create a difficulty which would not be compensated for, and the best test of successful vaccination would be for an experienced vaccinator to look at the vaccine vesicle at the end of the week.

4914. Would you vaccinate at a subsequent period of life, in order to test the efficiency of the first vaccination?—I think I might, if there was an epidemic of small-pox.

4915. Would you trust to a good round scar, with its characteristic depressions in ordinary times, without re-vaccination?—I should. I am accustomed, on the papers which I sign for the Civil Service of India, to put down "successful vaccination," if I find a well-marked cicatrix.

4916. Do you conceive that one single case of small-pox introduced into a population which is not protected by vaccination, would be communicated, so as to prove in that respect fatal to the population?—I think it would be dangerous on the illustration which I gave of an inflammatory body, if it once take fire one cannot say where it may stop.

4917. Do you think an epidemic might break out in consequence?—The disease might spread, but whether it might assume the characters of an epidemic might depend upon that influence which, in the medical profession, we call the *genius anni*.

4918. Do you remember Sir Thomas Watson's remark upon small-pox among the negro population in 1520?—I do not.

4918*. *Mr. Candlish.*] Vaccination is itself a disease, is it not?—Definitions are always difficult, but it is a disease, no doubt.

4919. *Dr. Brewer.*] Would you call it a prophylactic, or a disease?—It is a prophylactic disease.

4920. *Mr. Candlish.*] Does it entail any weakness?—I do not think so. Children are perhaps a little poorly for a day or two after vaccination, but for the most part they play about and eat their food, and are very well.

4921. Does not any weakness from whatever cause involve liability to other diseases and create susceptibility?—In this case it seems rather the contrary, because I was saying just now that in cases of whooping cough it has been used as a curative means. I do not mean to say that I propose it with that view.

4922. If the body were weakened by any disease, there would be greater susceptibility and less power of resisting disease, would there not?—I must not say that, for it was a dogma of the great master of surgery that the introduction and action of one poison was for the time being a preservative against another, that the human body was not liable to two actions at a time, and that the occurrence of one well-marked action was in that sense a preservative against another.

4923. Then on that principle, after vaccination, a child could not take fever?—He might not.

4924. Should you endorse that?—I think there is truth in that, but I should not endorse it.

4925. *Sir S. Child.*] You have seen the small-pox and cow-pox on each arm?—I have as I have stated.

Mr. Gull,
M.D., F.R.S.
5 May 1871.

Mr. CHARLES WEST, M.D., called in ; and Examined.

Mr. West,
M.D.
5 May 1871.

4926. *Chairman.*] Do you hold any public appointment connected with the profession at present?—I am Physician to the Hospital for Children, in Great Ormond-street.

4927. How long have you been so?—Between 19 and 20 years.

4928. That gives you great experience with regard to children, I presume?—Certainly; before that I held another appointment in connection with children. In short, I have held appointments in connection with the diseases of children since the year 1835.

4929. Do many thousands of children come under your knowledge every year?—I should think I have had charge of between 50,000 and 60,000 children in the course of the last 30 years.

4930. In addition have you had very considerable private practice, and especially in diseases affecting children?—Just so.

4931. What has been the result of your experience as to the effect of vaccination upon young children in producing disease?—I do not think it does produce disease.

4932. In all your large experience, have you had any case of any child which you had reason to believe had syphilitic infection in consequence of vaccination?—None.

4933. Did you ever have a case in which it has been stated to you that such was the result of vaccination?—Never.

4934. In the whole of your experience in the Children's Hospital, have you ever heard of such a case?—I have never yet had any person come with a child either syphilitic or supposed to be syphilitic, alleging vaccination as the cause of such syphilitic or supposed syphilitic infection.

4935. Are there many cases of syphilitic children which came under your knowledge?—I have seen large numbers; but I see much fewer now because for some years I have not attended what are called the out-patients of the hospital, and therefore I see and I have seen within the last five or six years far fewer than I used to see.

4936. In the early part of the time when you were engaged in this hospital, it would be the case, would it not, that there would be fewer syphilitic hospitals than there are now?—When I was seeing out-patients, perhaps to the extent of 2,000 or 3,000 different cases in the course of a year, I saw more than I do now, when I see only in-patients, and reckon therefore the patients by hundreds instead of by thousands.

4937. When you were in the habit of seeing a large number of poor children affected with syphilis, I suppose you had not unfrequently reasons given to you by the parents which would seem to explain the fact without any illicit connection?—Sometimes persons brought children either not knowing or affecting not to know what the disease was. More frequently, among the poor, the allegation was that the husband had had some disease which he had communicated to his wife.

4938. But you never even had the excuse for the syphilis given to you as being vaccination?—Never.

4939. Have you known any case of any other serious disease having been caused by vaccination?—I remember one child who died of erysipelas after vaccination produced by vaccination.

That is the only case of death that I have seen due to vaccination.

4940. As regards that child, was there anything particular in the case?—Nothing; it was vaccinated, and it had erysipelas in the arm, and it died of the erysipelas.

4941. Did the wound caused by vaccination seem to have brought on the erysipelas?—Just so.

4942. Do you at all imagine that the indirect result of vaccination may be to produce a condition of the body which would render the vaccinated child more liable to other disease, either to febrile disease or to lung disease?—Certainly not.

4943. How far do you consider that vaccination is a preservative against small-pox?—My belief has always been that it is a great preservative against small-pox, but I have seen but a very small amount of small-pox in my practice.

4944. Would your belief be that it is not an absolute preservative, but that it enormously increases the chances of safety?—Precisely.

4945. Would you apply that to preservation from disease, or to preservation from the severity of disease?—To both.

4946. Do you usually find that the children at the hospital have been vaccinated?—Until the occurrence of the recent epidemic I was not in the practice of inquiring into that, and therefore I could not answer that question positively; I have not been accustomed to ask the question when small-pox was not very prevalent; one did not pay, perhaps, so much attention as one might even think one ought to have done to making that inquiry.

4947. Have you recently made the inquiry?—The inquiry has been made; and in many instances of the in-patients received into the Children's Hospital the vaccination has not been performed, or it has been inefficiently performed.

4948. At what age do the children generally come to you?—As in-patients we seldom receive them before two years of age; and a large proportion of the children who are left unvaccinated at the age at which it might be thought expedient that they should have been vaccinated, are yet vaccinated before two years of age.

4949. Do you think that the marks of successful vaccination could disappear before two years of age, the child having been vaccinated before it was three months old?—I should think not.

4950. I have asked you with regard to your practical knowledge as to syphilitic infection, to which you have given a positive answer; have you studied the question so as to be able to give an opinion as to whether it would be possible for syphilis to be conveyed by vaccination?—My impression has hitherto been against it, except as the result of some carelessness on the part of the person who performed the vaccination, such as using an unclean lancet, and so forth; I mean that there must be some negligence on the part of the vaccinator to render such a thing possible.

4951. Do you mean by an unclean lancet, a lancet which had on it syphilitic matter unconnected with the vaccine vesicle?—I mean some gross carelessness; that has been my impression.

4952. Would

4952. Would you or would you not consider that the mere communication of the slightest portion of the blood of a syphilitic patient to the person vaccinated would be likely to cause syphilis?—I have not known anything that would lead me to suppose that syphilis was communicable by the inoculation of the blood of a syphilitic patient.

4953. Taking into account this possibility of infection from syphilis, which, although you have never seen it, theoretically you would not deny; and taking into account also the fact that vaccination is not a perfect preservative against small-pox, although it very much increases the chance of protection; what is your opinion as to the duty of the State in doing its utmost to encourage vaccination?—First of all, as far as I at present know, I am not prepared to admit the communicability of syphilis by the mere blood of a syphilitic patient. I would not state that such a thing cannot be, but I consider it not proven. Even supposing that it were so, I consider that the good of vaccination is so immense, and the risk so small, judging, if by nothing else, by my own experience, which certainly is a very large one, that I should regard it as the duty of the State to insist upon vaccination.

4954. I suppose there are very few persons in the profession in England who can have had as much experience, with regard to children as you have had?—I should think so.

4955. You have been brought into communication with a great number of medical practitioners in England, I presume?—I have.

4956. Have you met with or heard of any medical practitioner who was generally acknowledged by the profession to be eminent in it, who disbelieved in vaccination?—No, I have not.

4957. Have you met with any medical practitioners who would not think it their duty to encourage vaccination?—I am not aware of it; but not having seen much of small-pox, I am perhaps not so likely to have that question arise in conversation as another person might be. It so happens that it has not arisen, but I should not draw any certain inference from that.

4958. May I ask if you have any children of your own?—I have.

4959. You being both physician and parent, would you have them vaccinated?—I should have them both vaccinated and re-vaccinated.

4960. Have you any opinion as to the time at which re-vaccination should take place?—My impression is that it should be done about puberty, because that is the time at which the greatest change takes place in the constitution, and one would imagine as a matter of precaution that puberty is as wise a time to select as any.

4961. Mr. Holt.] Do you think that the poor are exposed to any greater risk in undergoing compulsory vaccination at large stations than persons are whose children are vaccinated in private practice?—Certainly; there are disadvantages in being poor in every condition in life and in every circumstance. Of course the child of a rich person must receive a degree of minute care which it is impossible to bestow upon the child of poor people, but I do not think the risk in vaccination is greater than that attendant on poverty in any other respect.

4962. Sir S. Child.] You say you do not take children in the hospital under two years old?—Not as a rule.

4963. For what complaints are those children

above two years old generally brought in?—There are two great classes of cases. There are the medical and the surgical cases. They do not receive accidents in the hospital, and, therefore, the bulk of the surgical cases are various forms of scrofulous disease. The medical cases are divided about equally between acute cases, such as inflammation of the lungs, for instance, and various forms of consumptive disease, or diseases of debility.

4964. Do you take in infectious diseases?—Yes, we take in fevers.

4965. You said that you had not seen a case of small-pox, did you not?—I said that I had not seen it in the hospital; because whenever a patient with the small-pox comes, we always send it to the Small-pox Hospital. That is the only disease which we absolutely refuse.

4966. Dr. L. Playfair.] I think, although you said that you had not had large experience of small-pox, you have had enormous experience in the diseases of children?—I have had very large experience.

4967. And if any important diseases were the immediate results of vaccination, or the proximate results of vaccination, they would have been likely to come under your attention, I presume?—Certainly. Vaccination, no doubt, has the effect in many cases of developing a disposition to some forms of skin affection, especially eczema, after vaccination which were not apparent before, just as you see with children while teething that the constitutional irritation of teething is often followed by the appearance of eczema or some other eruption, which had not shown itself before.

4968. Have you ever in your experience found that those affections which appear after vaccination have produced death?—No; I have mentioned the one case of death from vaccination which I have seen.

4969. Then in the cases to which reference was made with regard to syphilis, is it probable that if syphilis, except in infinitesimally rare instances, could be produced by vaccination, it would have escaped your attention?—I think it is most improbable.

4970. Do you think from your large experience that if it was at all, I will not say common, but even extremely rare, it is likely that you would have seen cases of it?—Certainly; I think it always happens in a large city like London that any one who is supposed to have a special reputation sees more than the average of that class of subjects which would be supposed to come within the sphere of his special knowledge.

4971. And with all your experience in the diseases of children you are not able to tell us that scrofula, consumption, or any other of those formidable diseases is either the immediate or approximate result of vaccination?—No; I believe they are not; I have never seen anything to make me suppose that they are.

4972. Chairman.] When were you last at the Children's Hospital?—This morning.

4973. Did you hear of any children being brought in who were alleged by their parents to be suffering from the bad effects of vaccination?—No, not this morning; but that would not go for much.

4974. Did you yourself find any who were in that state?—No.

4975. Have you within these last few months done so?—No.

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4976. Parents

Mr. West,
M.D.
5 May 1871.

Mr. West,
M.D.
—
5 May 1871.

4976. Parents do sometimes allege that I suppose?—It may be; but as I said, as I do not see the out-patients now, I should not be the person to hear it.

4977. Is it not the case that if a child has any disease shortly after vaccination, it is very often attributed to the effects of vaccination?—Yes.

4978. You do not pretend to say that vaccination gives an immunity from other disease for some time afterwards?—No.

4979. Therefore the old expression of *post hoc non propter hoc* may be very applicable to that case?—Yes; I do not think vaccination gives any immunity from other disease.

4980. I have had my attention called to a paper by you in 1857, in which I see you state this: "With reference to the alleged increased prevalence of measles since the introduction of vaccination, it suffices to say that vaccination preserves only from small-pox, not from any other disease. Measles is, next to the small-pox, the most contagious of all fevers. The child, who 60 years ago would have died of small-pox, is now preserved from that, often only to catch, perhaps to die, of measles. An increased number of deaths from the latter disease was the unavoidable consequence of the comparative extinction of the former. The fact is obvious, and is noticed by the late Dr Watt, of Glasgow, though for the moment lost sight of by some philanthropists and by mathematicians like Duvillard in his essay, 'De l'Influence de la Petite Vérole sur la Mortalité.'" Am I to understand from that, that you consider that there can be any ground for not attacking small-pox, because of the danger from measles?—Not at all. There is a curious thing which Dr. Watt states, which is, that the increased mortality from measles began during the latter half of the last century before vaccination was introduced. My own impression is that measles at the present day are much less fatal than measles were 60 years ago; I mean that the severity of measles varies at different periods; there are times when measles are very dangerous, and there are times when the character of measles is much less dangerous, and therefore the fluctuations in mortality from measles or from any other disease must not have too much importance attached to it.

4981. Some persons might possibly suppose from that passage that you thought that the increase of measles was in some respects resulting from the decrease of small-pox; is that your opinion?—Only in so far as that children who do not die of small-pox live to die of measles.

4982. Then you meant not that the decrease of small-pox caused the increase of measles, from which it might have been deduced that the decrease of small-pox by means of vaccination caused the increase of measles, and that therefore vaccination caused the increase of measles, but

simply that measles being a prevalent disease affecting children, children not dying of small-pox, were left in the possible state of being affected by measles, is that what you mean?—Certainly, that is what I mean.

4983. The theory has been started that inasmuch as there seems to be a law from the facts which we can at present generalise, by which mortality does not vary very much year by year, (for instance, the mortality in London in this epidemic being at this moment not much, or perhaps not at all greater than it was at a time when there was no small-pox), therefore all our precautions against special diseases are useless, and we might as well not attempt to put down small-pox, because people will die of something else, if they do not die of that; have you ever had that theory brought before you?—I have heard it. I think that most certainly any one who has seen a case of confluent small-pox, and afterwards had the option given him of whether he would die of confluent small-pox or of some other disease, would prefer not to die of small-pox.

4984. Would it not also be your opinion that after all, all that we can do is to attempt by every possible means to check disease?—Certainly.

4985. Might not this be the case, that although by the crusade which we make against small-pox, we reduce it to such a state that it has not much more effect upon mortality, or perhaps no more effect upon mortality than other diseases, yet that if we left off our precautions against small-pox, it might come in as an overwhelming pestilence, immensely increasing the mortality?—I think it would be so.

4986. Do you happen to have observed that the number of deaths in London from violence, that is to say, either from intentional violence, such as murder and manslaughter, or from unintentional violence, such as being run over in the streets, shows a wonderful equality year by year?—Yes.

3987. Then would not the theory which has been started of not attacking small-pox, because measles or some other disease, might kill the patients afterwards, be something like the theory of taking no precautions against a house being burnt down, because the individual who was not killed by fire might be killed by being run over?—Very much the same.

4988. Dr. Brewer.] Have you any reason to believe that at the present time infant life is less secure or of shorter duration, than at any previous period in medical history?—I believe the reverse.

4989. Do you think that vaccination accounts for the diminution of small-pox in vaccinated communities?—Yes.

4990. Do you attribute that diminution to anything else but vaccination?—No.

Tuesday, 9th May 1871.

MEMBERS PRESENT:

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. W. E. Forster.

Mr. Hibbert.
Mr. Holt.
Lord Robert Montagu.
Mr. Muntz.
Dr. Lyon Playfair.
Mr W. H. Smith.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. JONATHAN HUTCHINSON, called in; and Examined.

4991. *Chairman.*] Do you hold any public appointment connected with the medical profession?—Yes; I am Senior Surgeon to the London Hospital, Surgeon to the Ophthalmic Hospital in Moorfields, and Surgeon to the Hospital for Skin Diseases.

4992. How long have you been in the profession?—Twenty-one years.

4993. Has not a case been brought before you in which it was supposed that syphilis had resulted from vaccination?—I believe I saw this case at the suggestion of Dr. Seaton.

4994. Before I ask you with regard to the case, I wish to have the history of the case so far as you can tell it. Were you first informed of this case by Dr. Seaton?—Not by Dr. Seaton, but I was informed of it at Dr. Seaton's suggestion to the medical man in charge of the patients. I believe that Dr. Seaton suggested that I should be asked to examine the facts.

4995. Then were you informed that there had been a case of supposed syphilis from vaccination?—Yes.

4996. Are you acquainted with the name of the practitioner who vaccinated the patient?—I am.

4997. I do not ask you his name, but I must ask you this question; is he a public vaccinator?—He is not.

4998. Under the circumstances, I suppose that you would prefer not giving the name?—I should much prefer it.

4999. Was the practitioner in this case an authorised and legal practitioner?—Two practitioners, father and son, are concerned, both being legally qualified medical men, and the son was the actual vaccinator for his father.

5000. As a surgeon, or as a physician?—As a surgeon with a vaccination certificate.

5001. Will you give the history of that case so far as it came under your knowledge?—Thirteen persons, most of them young adults, servants and shopmen, were vaccinated from one child on the 7th February. They were all second vaccinations, or re-vaccinations.

5002. Were they males?—They were of both sexes. I think about four were females and the rest were males. They were all vaccinated from one child; the child had been lent to the surgeon

who took the lymph from its arm for the purpose of vaccination from a public vaccinating station. He vaccinated from arm to arm 11 of those 13 individuals, and two from tubes, and two months later I was asked to see the sores on the arms of the patients who had been vaccinated; out of the 13, 11 had on their arms sores which I considered quite characteristic of syphilis. They had the primary sore of syphilitic contagion.

5003. Have you obtained any account of the manner in which the vaccination had been performed?—Perhaps I may state that the two who have escaped out of the thirteen are the two who were first vaccinated. The whole of the others have suffered. That is the only peculiarity which I have to mention as regards that point.

5004. On the 7th of February the vaccination was performed; when were you called in?—I think I was called in in the early part of April, on the 4th or 5th of April.

5005. Did you see the child?—A few days later I had the child sent to me, and I examined the child.

5006. What was the state of the child?—From the symptoms which the child presented, although it appeared in good health, I should have no doubt that it was the subject of inherited syphilis.

5007. What caused you to arrive at that conclusion?—The symptoms were characteristic, there was an eruption on the child's body around the orifice of the bowel.

5008. *Dr. Brewer.*] Upon the genital organs?—Not upon the genital organs; around the orifice of the bowel.

5009. *Chairman.*] Have you ascertained from the practitioner whether he had examined the child?—He had not examined the child on the parts mentioned, nor I believe had the child been examined there at the vaccine station from which it had been lent. I ought to add in reference to that, that the symptoms which the child had two months after vaccination were very slight indeed. The child looked healthy, and I do not think that any blame attaches to those medical men. I should not myself believe that those symptoms were present at the time of the vaccination; but I cannot speak positively upon that point.

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5010. How old is the child?—The child is, I believe, six months old now.

5011. Had the vaccination been successful with the child?—Quite successful.

5012. In the case of eleven of those persons who had been vaccinated, you found symptoms of a nature which you supposed to be primary syphilis?—Yes.

5013. Have you treated them since?—I have.

5014. Have you reason still to believe that it was so?—The treatment has very strongly confirmed that impression; I have in my own mind no reasonable doubt on the matter.

5015. Has there been any appearance of secondary symptoms?—There have been slight appearances on several, and more definite ones on two, but I must still state that the appearance of secondary symptoms are not such as I think would be convincing to many, they are slight.

5016. You say that two of the persons vaccinated appear to have escaped the infection?—Two have quite escaped.

5017. How do you account for the difference in your own mind?—My impression is, that the difference consists in the transference of pure vaccine lymph to those two. In the first prick made in the child's arm there was probably no transference of blood in addition to the lymph.

5018. You stated, did you not, that you were first informed of this case by Dr. Seaton?—Not by Dr. Seaton. The cases are in the hands of a private medical man, who first applied to Dr. Seaton about the occurrence, and I believe that Dr. Seaton then suggested to him that he should ask me to see the cases and give an opinion whether it was syphilis or not; it was from the medical man that the application came to me, and not from Dr. Seaton.

5019. Mr. *Candlish*.] The reference to you, you think, was at the suggestion of Dr. Seaton?—The surgeon who came to me was personally quite a stranger to me, and he said that Dr. Seaton had said that he had better come to me.

5020. *Chairman*.] I suppose that was on the supposition that an independent medical practitioner had better examine into the case?—Quite so.

5021. You stated that it was a child obtained from a vaccine station; did you ascertain whether the child had been lent for vaccination from that station to any other practitioner?—I believe not; indeed, I should feel certain that it had not, for all the lymph which it could afford was taken for those patients.

5022. You have stated that you have been in the profession for many years; has it been part of your medical practice to have much to do with vaccination?—Not at all; I have had nothing personally to do with vaccination; I have not vaccinated a child since I was an apprentice.

5023. Has it fallen within the range of your practice to have much experience in syphilitic cases?—A great deal.

5024. Have you heard of any other case in which you would suspect syphilis to have been produced by vaccination?—Yes; some years ago there were cases which were a little suspicious, but respecting which I did not at the time investigate the evidence, or keep notes sufficiently accurate to be able to speak of them now.

5025. Did they fall under your personal observation?—They came under the care of Mr. Startin, at the Hospital for Skin Diseases, where I was then assisting him, and I relied rather

more, perhaps, upon his opinion than upon my own.

5026. Was that a case in which it was suspected that syphilis had been caused by vaccination?—Yes; there were several cases.

5027. Was it suspected, or was it, to your mind, proved?—At the time, I believed it; but I must repeat, that I did not investigate it sufficiently to enable me now to give a positive opinion; it is 15 years ago.

5028. Between that time and this time, has anything of the kind come under your personal knowledge?—Between that time and this series of cases I have never seen anything which I have thought in the least suspicious as to syphilis having been communicated by vaccination; I have seen many cases in which it has been asserted that it had been, but I have seen none in which I believed that it had.

5029. In this particular case, in what way do you imagine that the syphilis was communicated?—I believe by the transference of blood-cells in the act of vaccination.

5030. Would that arise from carelessness in the vaccination?—So far as the transference of blood is carelessness. It will be so considered in future, but I think it can scarcely have been considered so hitherto.

5031. Is it easy to avoid?—I should think it is very easy to avoid.

5032. Do you think that the transference of syphilitic disease could have been avoided by an inspection of this child previously to vaccination?—I doubt very much whether it could have been avoided in that way; the child looked healthy, and it had passed at the vaccine station from which it was taken as healthy; at the same time that is not certain; it is quite possible that if the parts which I inspected carefully had been then inspected carefully the disease might have been found.

5033. What is your opinion, as a medical practitioner of experience, as to the necessity of vaccination?—I consider it of the utmost necessity and of the utmost importance.

5034. Would the discovery of this case induce you to alter that opinion?—Not in the least.

5035. But still it is a very serious thing for syphilis to be communicated in vaccination; upon what ground would you say that it did not alter your opinion?—My impression is that the number of cases in which any risk of the communication of syphilis is run is infinitesimally small in proportion to the benefits likely to accrue from vaccination. I may state that for the last 15 years I have been working specially at this subject with a very large opportunity of observation among cases of skin disease and cases of syphilis, and during those years I have had no other case in which I believe that this has taken place.

5036. You have already given an answer which perhaps makes this question unnecessary, still I think it right to ask it; was there anything in this case brought before you which showed any wish on the part of the Medical Department of the Privy Council in the slightest degree to conceal the case?—Not in the least.

5037. In fact, it might be said that it was through them that it came to your knowledge?—It was through them that it came to my knowledge.

5038. Since then it has been brought before one of the medical meetings, has it not?—It has.

5039. Consequently

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5039. Consequently the attention of the profession is directed to it at this time, I presume?—It is; I have stated that before this series of cases my experience had not brought before me any other cases in which I believe syphilis had been communicated by vaccination. If I may be allowed to give them without giving names or particulars, I have another series of cases under investigation which I very strongly suspect to be instances of the same kind, but they have only come to my knowledge within a few days.

5040. Will you describe those cases without giving the names?—I believe that two children, aged four years and one year respectively, have been each vaccinated from a syphilitic child, and each now has chancres on the arms and a secondary rash upon the body.

5041. Have you seen the child from whom they were vaccinated?—I have.

5042. Is there evidence of syphilis there?—The evidence is very slight indeed, but I believe that it is evidence.

5043. How long ago is it since they were vaccinated?—They were vaccinated in the beginning of February.

5044. When did you see the child?—I saw the child last Saturday.

5045. Do you know what the state of the child was at the time of vaccination?—I believe the child was selected out of a number who were offered as being one of the most healthy-looking children then present, and I should think there was nothing in the child which could have led to suspicion at the time.

5046. Was that a vaccination in private practice?—I believe it was not.

5047. You think that it was performed at a public vaccination station?—Yes, I believe it was.

5048. Are you still inquiring into this case?—Yes, I am investigating it.

5049. Though you are not prepared as yet to give a positive opinion upon it, you have a strong suspicion?—I have a very strong suspicion.

5050. Have any other medical men but yourself inspected the case?—Yes.

5051. I suppose that the fact of the first case having been examined into by you, has been well known in the profession?—It has.

5052. Consequently, any case in which there was suspicion would be likely to be brought before you, I presume?—Quite likely. I have had many suspected cases sent to me during the last fortnight.

5053. Mr. *Candlish*.] Was the lymph taken direct from the arm in the last case which you have mentioned?—Yes, directly from the arm.

5054. Some 14 or 15 years ago you replied to questions addressed to you by the medical officers of the Privy Council, to this effect. The question is, "Have you any reason to believe or suspect that lymph, from a true Jennerian vesicle, has ever been a vehicle of syphilitic, scrofulous, or other constitutional infection to the vaccinated person, or that unintentional inoculation with some other disease, instead of the proposed vaccination, has occurred in the hands of a duly educated medical practitioner." Your answer, as contained in the Blue Book, is, "I believe that I have seen four or five instances in which local syphilitic affections were induced by vaccination performed under ordinary circumstances, and by duly qualified men;" are those the cases to which you have been adverting?—Yes, they are.

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5055. You have expressed some doubt to-day, have you not, as to whether or not syphilis has been induced by vaccination?—I have great doubt as to the accuracy of my observation in those cases.

5056. Did you see them yourself?—I did see them myself; but I have great doubt as to the nature of the disease which we then thought was syphilitic.

5057. Then you reply, "In one or two of these the constitution suffered also, as seen by appearance of disease in several parts, but in others it was not perceptibly affected;" to what disease do you refer there?—I should state that the case referred to was that of a child who came to the hospital with skin disease, and was under Mr. Startin's care, but was under my own observation also. At that time I was not working specially on this subject; I was obliged, in replying to that question, to state all I could remember, but I could not produce the evidence which would render that conclusive; Mr. Startin believed it at the time, but I could not publish that case; I have not the details to give.

5058. Since then have you had any cases from which you would infer the communication of syphilis by vaccination until the cases which you have just mentioned came before you?—None whatever, and I have been working hard at that subject almost ever since.

5059. Would the facts that you have been recently investigating tend to confirm the view which you formed 15 years ago of those cases?—They led me to the opinion which I then held, and which I have held ever since, that syphilis can be communicated in the act of vaccination. I do not entertain any doubt upon that point.

5060. Are you aware that the profession in general deny that?—I am not aware that the authorities on the subject deny it; I believe that several of them hold it very clearly; I am aware that the general opinion of the profession is perhaps opposed to it, but not the opinion of those who have carefully examined into the question, I believe.

5061. Are you aware that the opinions before this Committee tend in that direction, and are, some of them, very definite to that effect?—I am not.

5062. Then your opinion is, that men of position and authority in the profession believe that syphilis may be conveyed by vaccination?—I believe that those who have examined specially into the evidence collected abroad believe that.

5063. It has been pretty fully established in France, has it not, over a rather large area, and in a great number of cases?—Not in a great number of cases; Germany and Italy have given the chief series of cases. In France there have been one or two isolated cases which are still disputed by those who saw them.

5064. I have an authority in my possession, in which it is stated that some 30 cases occurred in Brittany in one spot; has that come to your knowledge?—I forget where the cases were; I know that there have been some cases in Italy; I know the details of several series of cases.

5065. In 1866 the "*Lancet*" contained this article, headed "Syphilis extensively propagated by vaccination in France." "In a western department of France, some villages have been the theatre of severe syphilitic symptoms upon more than 30 children who had all been vaccinated from a little girl, with six punctures in each

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each arm," and so forth; did those cases come under your observation?—I forgot, at the moment when I answered your question, as to their having occurred; but I know that several series of such cases have occurred on the Continent, in Italy and elsewhere.

5066. Dr. Ricord is an authority, I presume?—M. Ricord is an authority.

5067. Are you aware that he reports conclusively upon that series of cases?—I cannot say; M. Ricord reported doubtfully upon the one case to which I referred, which occurred in Paris.

5068. The article proceeds, "This misfortune created so much sensation, that the Academy of Medicine, of Paris, sent down two commissioners, Messrs. Henry Roger and De Paul;" they inquired into it, and they confirmed the facts as reported; would you admit those to be authorities?—Yes; M. Depaul and M. Ricord, certainly.

5069. Is it your opinion that syphilitic disease is conveyed by the pure lymph from a child suffering from syphilis?—No; I believe not.

5070. Must there be an admixture of something foreign to the lymph?—Of blood, I believe.

5071. Would the scab over the vesicle, being mixed with the lymph, convey disease?—I have no evidence on that point, but I should not think it was of any practical importance.

5072. Lymph itself is a production of the blood, is it not?—It is.

5073. If blood may convey a disease, would you not infer that the lymph proceeding from the blood may also convey the disease?—It is not a subject upon which I should like to infer anything; I should like to have experiments and facts.

5074. You have stated, have you not, that there was blood mixed with the lymph in the cases you have been describing, and to that you attribute the communication of syphilis?—I may state briefly my reasons for believing that the lymph cannot convey the disease. In this series of cases two patients have been successfully vaccinated from the same child, and have got no contamination. In the case of those patients, some of whom have syphilitic sores, perhaps they have had three vaccine punctures, and two of the punctures have passed into syphilitic sores, while the other has been a proper vaccine vesicle, and has gone through all its stages perfectly well. It has also been proved that blood can transfer syphilis.

5075. Are you aware whether or not anything was mixed with the lymph in the more recent cases that have occurred?—I am not aware; I have not seen the person who was with the child from whom the lymph was taken. I have seen its mother, but she was not with it, and I do not know whether the arm bled or not.

5076. You have not seen much vaccination you say?—I have not seen anything of vaccination myself.

5077. Is it quite a common thing for blood to mix with the lymph?—I have asked a great many private practitioners who are largely vaccinating, their experience upon this point, and a very general reply is, that they never allow blood to be mixed with the lymph. I believe it is a thing which can be easily avoided by anybody who wishes it to be avoided, but hitherto it has not been insisted upon with sufficient clearness that it must be avoided.

5078. This case of 13 persons vaccinated from one child, comes again before the Medico-Chirurgical Society to night, does it not?—It does.

5079. Have you further investigated the case since the last meeting?—It is an adjourned discussion; that is the reason of its coming on again this evening. I have made no special further investigation, there was nothing further to do in fact.

5080. Have you any further facts upon those cases?—I have no additional facts within the last fortnight.

5081. There was some doubt expressed, was there not, as to whether those persons were suffering from syphilis?—I think there was at the meeting, but if there was, it was very slight.

5082. You have not the slightest doubt that those were syphilitic cases?—I have none.

5083. The child in this case you said was quite healthy, and latent constitutional syphilis was not detectable by an ordinary professional observer?—I do not think it was; I did not see the child at the time.

5084. Do you think that you would have detected the disease, had the child been submitted to you?—The first remark I made as to the child when it was brought into the room was, that the child was syphilitic, but I could not have told anybody why I said so. It was from something in its general appearance. I have worked at the subject specially, and should be likely to know from my general experience.

5085. Did you pronounce that opinion from any scientific data?—I pronounced it from the general appearance, and from the tint of the skin.

5086. Is that the last child to which you referred?—That child is much healthier looking. I did not, when I looked at that child, think it was syphilitic, except that I expected to find it from what had occurred, but I certainly should not have known it from its face. It was a fine full-grown healthy child.

5087. Would a more careful examination have revealed syphilis?—I do not think it would to most medical men.

5088. This then follows seemingly, that there is no protection whatever against vaccination with the lymph from a syphilitic child?—I think that I have already said that I do not believe that the lymph would convey disease.

5089. Have you any security whatever that the child from whom you take the lymph may not be suffering from syphilis?—I believe that there are cases of latent syphilis which cannot be detected by any medical man, unless he examines into the history of the child as well as its appearance.

5090. Then notwithstanding any amount of skill or care on the part of the practitioner, he may, if he touches blood, communicate syphilis from a child having no appearance whatever of syphilis, may he not?—I am obliged to say that I believe he may, but I believe it would be exceedingly infrequent.

5091. That is to say, if there had been full care in examining the child as to whether there was syphilis, but not the full care to prevent any blood being transferred with the lymph?—Yes; I believe that the examination of the child alone would not be a sufficient precaution.

5092. In this last case, how long after the vaccination did you see the child?—Three-and-a-half months.

5093. Did you examine the child's body?—I did.

5094. Did you find traces of syphilis?—I found

found very slight ones; I doubt whether what I have found would convince any other medical man. They convinced me, but I am bound to say that I do not think that they would convince many.

5095. Then, in the second case, might not it be open to some doubt whether the child who was used to vaccinate from had syphilis?—It might be open to some doubt.

5096. Has any other medical gentleman examined the case?—No other medical man has seen the child; several have seen the other patients vaccinated from it, but nobody but myself has seen the child.

5097. Mr. *Candlish*.] Is there any doubt as to the two children whom you mention having syphilis?—I entertain not the slightest.

5098. *Chairman*.] Have any other medical gentlemen examined them?—They were sent to me by the two medical gentlemen who had first seen them, neither of whom had the least doubt. They have been seen since that by three or four others, and the opinions of those gentlemen I am not prepared to state.

5099. In this last case it is not fully ascertained that the child from whom the two children were vaccinated had syphilis; but you strongly suspect it?—I believe it most firmly; but the evidence which I have would not, I believe, be conclusive to many.

5100. How long ago was the case brought before you?—On Saturday last.

5101. Then it is still under investigation?—It is still under investigation.

5102. Do you know anything of the previous history of the two children that were vaccinated?—They are brother and sister; one is four years old, and the other is one year old, and I believe that they were perfectly healthy, and they still look perfectly healthy. I suppose you allude to the question of their having inherited a taint.

5103. Mr. *Candlish*.] Have you seen the parents of the child from whom the lymph was taken?—I have.

5104. Are they healthy?—They appear healthy; I have put the direct question to the father of the child, and he entirely denies the existence of any such disease. The mother appears healthy, but I have put no question to her.

5105. *Chairman*.] This last case, I suppose, is one which you would consider requires more investigation before you could give it as a positive statement?—Yes.

5106. But I think I understand from you that it is in train for such a further inquiry?—It is.

5107. Mr. *Candlish*.] Syphilitic disease has its existence in the blood, has it not?—It has.

5108. If a diseased child is vaccinated, from the diseased blood is generated vaccine lymph, is it not?—Yes, but it does not follow from that that the vaccine lymph partakes at all of the disease.

5109. Are you perfectly safe in inferring that the lymph would not be tainted?—I think the evidence is overwhelming that it is not tainted.

5110. Dr. *Brewer*.] In the case of this child which you saw, which communicated primary syphilis, what was the nature of the characteristic eruption?—The eruption is syphilitic psoriasis.

5111. Was it annular?—No, it is in flat patches, not in rings. It is syphilitic psoriasis.

5112. Did you ever know of syphilis lying dormant for years, and subsequently to appear without any ostensible reason for it?—Yes.

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5113. Did you ever see a case of syphilis developing itself years after a supposed cure of the primary disease, both in the parents and in the children of those parents?—Yes.

5114. Are the cases of children who have been vaccinated, and have shown symptoms of primary syphilitic disease, so rare as to have been almost unexampled in the experience of the majority of medical men?—Quite so.

5115. Have you any reason to believe that it is possible that those children developing the syphilitic disease may really have inherited it from their parent or parents?—No, in respect to the cases I have mentioned, I believe it quite impossible that they should have inherited it.

5116. Will you tell me why?—Because, although as I have said constitutional disease may be latent for years, and may then break out, I have never seen a *secondary* syphilitic rash come out in that way after a period of years. These two children have a symmetrical *secondary* rash, which I have never seen come out at a period, speaking roughly, of a year after the contagion, and that is a long limit to give.

5117. Have you never seen syphilis lie dormant for a greater period than one year?—Yes, when it has appeared in the form of tertiary symptoms. Irregular unsymmetrical symptoms are common enough, but not those of the *secondary* class.

5118. Did you ever see a parent die of constitutional disease, such as *motor ataxia*, induced by syphilis which has been lying dormant?—I have never seen a patient die of *loco-motor ataxia*.

5119. Are you aware that 13 cases out of 14 of *motor ataxia* are fatal in Europe?—They are very rare, and their connection with syphilis, I should think, in many cases, extremely doubtful.

5120. You have, I presume, seen latent constitutional syphilitic disease extremely difficult, if not impossible, to detect in a child?—In a few instances; I wish to be understood as admitting that it is possible for a child to look quite healthy while it has a latent taint of syphilis; but it is not common; it is extremely unfrequent; generally it is a matter of the utmost care to distinguish a syphilitic infant.

5121. What course did this constitutional syphilis run in the 11 cases of the first series brought before this Committee?—In the first series 11 out of 13 vaccinated patients have had chancre, some one, some two, and some three, in the spots vaccinated.

5122. What is the character of the chancres?—They have, most of them, been indurated and ulcerated.

5123. Are they perfectly circular, or are they ragged?—They are all as nearly circular as may be.

5124. Are they primary or original introduced chancres of syphilis?—I believe them to be syphilitic chancres.

5125. What was the result, constitutionally, of these 11 cases?—None of them have as yet had anything which is positive as regards constitutional effects.

5126. What was the length of the treatment?—They are all still under treatment; they have all been taking mercury for a month.

5127. Do you believe that mercury itself produces diseases exceedingly like syphilis?—I do not.

5128. You disagree with Liston upon that point?—Yes, if he thought so.

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5129. Do

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Mr. J. 5129. Do you think that syphilis has any special treatment suitable to it?—Yes.

Hutchinson. 5130. And you think that the mercurial treatment is that treatment?—Yes.

9 May 1871. 5131. Are you aware that those who work at looking-glass manfactories display many of the symptoms of secondary syphilis, from the simple use of the mercury?—Not unless they have had syphilis in addition to working in a looking-glass manufactory.

5132. You disbelieve those cases of Mr. Liston's?—Yes, I do.

5133. You have, however, an idea, I presume, that Mr. Liston was a man of considerable experience, and a man of very high attainments?—Yes.

5134. Do you apprehend that any constitutional mischief will arise from those syphilitic sores?—I should expect that a great proportion of the patients I have alluded to, and probably most of them, will have mild or more or less severe constitutional symptoms.

5135. You are fully aware, I suppose, that, in the opinion of some medical men, mercury is in itself more fatal to the constitution than a constitutional syphilitic attack?—Yes, I am aware that there is a great variety of opinions upon that point.

5136. Are you aware that many deem that mercury can never be extricated from the human system, but that, if once taken, it is to be found afterwards in the bones, the tissues, and every part of the body?—I am not aware that many hold that opinion.

5137. Did Liston hold it?—I cannot answer that.

5138. Did you ever hear of it amongst the great French writers?—I have heard it often stated, but never by anyone of great authority, certainly.

5139. Do you look upon Mr. Liston as of no authority?—I am not aware that he said it.

5140. Mr. Taylor.] I do not understand that you, in those cases of which you have spoken, attribute much criminal carelessness or neglect to the vaccinating medical men?—I do not.

5141. In those two cases, one of the children appeared externally quite healthy, and in the other one, though to your very experienced eye there was something which seemed to mark the presence of syphilis, yet probably by an ordinary practitioner who had had less experience, it might have passed quite unobserved; is that so?—Yes, I believe so.

5142. You believe the disease to have been communicated by an accidental transfusion of blood, do you not?—Yes.

5143. And you think that the mixture of blood in the operation was not criminal, seeing that the general opinion of medical men was that there was no danger in that admixture?—Yes.

5144. For the future, of course you would deem it neglectful to the extent of criminality?—I am not sure that I would use so strong an expression as that, but I think in proportion to the diffusion of knowledge as to its danger, it will approach that.

5145. It is a fact then, is it not, that vaccination having been practised for the last 70 years, this opinion of the danger of using contaminated blood has not become recognised by the medical profession?—It is; vaccinators have, for a long time, been instructed not to use blood, but still without any definite aim, and certainly without

the strong conviction as to its danger, which we shall from these cases now entertain.

5146. It is a fact, is it not, that a series of questions was sent round to a large number of medical men some 13 years ago, of which series the question of the communicability of syphilis or other diseases was one, and that the enormous majority (if I am not mistaken, all but three) denied, in their opinion, the possibility of its communication?—I am not sure that they denied the possibility; but they expressed their own non-familiarity with it, and said that they had never seen the thing happen.

5147. Is it your opinion that syphilis is not communicable through lymph even from a syphilitic patient?—It is perfectly certain that you can vaccinate from a syphilitic patient, and induce the vaccine vesicle, and nothing else.

5148. Would you, nevertheless, agree with the opinion which has been expressed to us, that a practitioner would be highly culpable who knowingly took matter from a syphilitic child?—I think he would.

5149. Apart from the danger of mixing blood with the lymph?—I think he would. The thing can be so easily avoided, that though I do not myself believe any risk could be run, I think it is a thing which certainly ought not to be done.

5150. The general opinion which is held by the profession must doubtless greatly affect their interpretation of facts as they come before them?—Yes.

5151. If, therefore, it were the universal, or all but universal, opinion of the profession, that syphilis was not communicable through vaccination, and if syphilis appeared in children after vaccination, they would probably reject as absurd the idea that it had been communicated by vaccination?—The knowledge of syphilis is quite sufficiently accurate, and the habits of investigation on the part of medical men I think are quite sufficiently careful to exclude any such fallacy. I should feel certain that if such cases had occurred in any large number we should have heard of them. I would not deny that an isolated case may have happened, but I should feel certain that no large number had happened.

5152. Syphilis, I think I understood you to say, may lie dormant in the system for an indefinite time?—Not the early stages of syphilis. A patient may have syphilis, and may have gone through the first and second stages, and then the taint may lie dormant for a long time afterwards; but the first and second stages cannot lie dormant beyond a certain period, as far as our knowledge goes.

5153. If a medical man whose view hitherto had been that syphilis was not communicable by vaccination, discovered syphilis in a child after vaccination, do you not think that his conclusion would be that the syphilis was otherwise produced than by vaccination, or that it was hereditary?—He would inquire into the facts, and I think that the facts would be tolerably easy of ascertainment.

5154. *Chairman.*] You state that syphilis does not lie dormant long in an infected person; how soon after birth is it likely to appear in a child who has it merely by hereditary transmission?—The symptoms usually appear within three months of the child's birth; but I may say that the secondary symptoms are sometimes in children omitted altogether.

5155. But

5155. But the primary symptoms ought to appear, according to usual rules, in about three months after birth, ought they not?—A child who has inherited syphilis, never has the primary symptoms. It inherits the taint, and the secondary symptoms should come out in three months after birth.

5156. Mr. *Taylor*.] There has been some doubt felt by medical men, has there not, in regard to this particular case, as to whether that is syphilis which in your opinion is syphilis?—I will admit that there is some doubt as to both cases on the part of some medical men.

5157. Syphilis then may in its primary symptoms be exhibited in a child, and yet not, according to the observation of all medical men, be recognised as syphilis?—It may be so in rare cases.

5158. Do you not think that a medical man who was impressed with the conviction that syphilis could not be communicated by vaccination, might in such a doubtful case, where there was a doubt even among medical men, have a strong disposition to declare that that was not syphilis which really was so?—I think that the interest of the profession has been so great upon this subject, and that we have been seeking such facts so carefully, that if any such case had happened it would have been sure to have been produced at a medical society at once, if any medical man had had reason to suspect such a case.

5159. Do you not think that you credit all medical men with a degree of logic, and acumen, and precision, which is certainly far beyond that which is manifested in all other professions?—I do not think that I am assuming very much on this matter. It is a matter of great importance, and the profession has been very much alive to its importance.

5160. You would at any rate attribute much less force to mere negative evidence than to positive evidence, I presume?—Yes.

5161. Then, if such accurate observers as Dr. Paul, Ricord, Rogers, and many others agree that syphilis may be produced in the way which you describe, would it invalidate your observation or theirs if 50 or 100 gentlemen came before us and told us that they had never seen such cases?—Not as to the possibility of it, but as to its frequency, it would be very valuable evidence.

5162. Are you of opinion that the importance of vaccination for preserving the health of the country is very great?—It is very great.

5163. Are you in favour of compulsory vaccination?—Most strongly, and I think the recent facts which have been alluded to are the strongest which we could have in favour of compulsory vaccination.

5164. You are, nevertheless, probably aware of the existence of a strong feeling in certain places, and amongst certain classes, against vaccination; and you will admit that the sense of wrong which such persons feel in the presence of the possibility, or the actuality of syphilis being communicated by vaccination, renders the policy of compulsory vaccination more doubtful, inasmuch as it is probably calculated to excite an unnatural antagonism to that which may produce such evils?—I think that expedients may be devised under which vaccination will become practically safe; and I think that the fact that those cases have occurred during a period of panic, as regards small-pox, is a very strong reason in

favour of carrying out vaccination quietly and thoroughly, and in a manner in which it can only be done under a compulsory law.

5165. Do you not think, on the whole, that the best way to convince the population of the desirability of vaccination is to promote it with such care, without compulsion, as shall convince them by observation that evil results do not arise from it?—I have already expressed my belief that it can only be made general by compulsion; I think that without a compulsory law there would always be a certain number of parents who, through carelessness or prejudice, would not have their children vaccinated; we should be constantly having material on which small-pox could fasten, and there would be panics about small-pox, and we should have accidents such as those which have occurred.

5166. Perhaps you believe that if sufficient compulsion were exercised to overcome the *vis inertiae* of the merely idle or neglectful, it would not be wise to press vaccination upon those who have what we may call a conscientious objection to vaccination?—I do not think that anybody has any right to neglect vaccination as a protective against small-pox.

5167. Mr. *Candlish*.] How would you enforce it?—I have not thought much of the practical measures as to enforcing it, but it would be done by fine, I suppose.

5168. Supposing then, you or I refused to vaccinate our children in obedience to the law, how should we be compelled to do it?—I am afraid that is rather a matter out of my province.

5169. You say that you would compel it; but then you must have some mode of compelling it; what would that be?—I should compel it by fine, and by the usual legal measures.

5170. And perpetual imprisonment if it was not done?—I do not know about perpetual imprisonment.

5171. But even if you fined and imprisoned, mere fine and imprisonment is not vaccination?—I suppose it would amount to it in a very large majority of instances.

5172. If you and I still refused, the child would go unvaccinated still, would it not?—I should think such instances would be extremely unfrequent.

5173. You would not go further than fine and imprisonment in compulsion, would you?—As to vaccination, by force, of the child, I have not considered that question.

5174. Mr. *Holt*.] I think I understood you to say to the honourable Member for Leicester that a medical man could easily avoid taking lymph from the arm of a syphilitic child; how is that to be done if the disease is sometimes present, and not capable of detection?—If I said so, I did not intend to say it as a universal thing; I say that the majority of syphilitic infants are very easily recognised, and no medical man would ever think of vaccinating from them; but there are now and then syphilitic infants whom it would be very difficult to recognise.

5175. Then there are certain risks in all cases attending vaccination; lymph may be taken without the knowledge of the medical man, from the arm of a child which is syphilitic, may it not?—It may be so now and then, but my impression is that it would occur with extreme infrequency.

5176. I understand you to say that the profession has still something to learn respecting the

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risks from vaccination?—Yes, I should think so; but the amount of evidence as to the smallness of the risk is very large indeed.

5177. I understand you to admit that there are risks, however slight, attendant upon the operation arising both from the state of the child, from whose arm the lymph is taken, and also possibly from want of care on the part of the operator?—Yes.

5178. Do you think that children vaccinated at large vaccine stations, are more especially exposed to the risk attendant on vaccination?—I should think that the risk is slightly greater, in the case of the poor than it is in the case of the rich.

5179. Mr. Muntz.] I think you stated that you have attended a great deal to the subject of the disease of syphilis, and have made it your special study?—I have.

5180. Knowing all the evils which arise from that disease, and the possibility, as you have stated, of the inoculation of syphilis, by means of vaccination, do you think that the risk is so infinitesimal that you consider vaccination to be a positive duty?—I do, indeed.

5181. Have you children of your own?—Yes; I have eight.

5182. Are they vaccinated?—Yes; they are all vaccinated.

5183. You would consider it, I presume, a neglect of duty not to vaccinate them?—Certainly.

5184. Would this painful case of children being inoculated with syphilis, by vaccination, change your opinion either with regard to the general subject, or with respect to your own family?—I have all my own children vaccinated, within a month of their birth, and I shall do so in future if I have others.

5185. Mr. Hibbert.] I understand that you brought those cases before a Medical Society in April last?—Yes, I did.

5186. They produced considerable excitement, and great interest in the profession, did they not?—Yes.

5187. Does not that show rather that very few cases of the kind have ever occurred before?—It does so most strongly, and I might say that nearly every medical man, whom I have spoken to since, has said, “I should not have believed it.” Some have been polite enough to add, “unless you said it,” but a great many have clearly felt a very strong disinclination to believe it, from having had such large experience of vaccination, and having seen nothing of the kind.

5188. Do you consider those risks, about which you have told the Committee, are caused more by a careless mode of vaccination than by the vaccination itself?—I think that the introduction of blood, which will be deemed carelessness in future, is the dangerous thing.

5189. Would it not have been considered careless even before those cases were made public?—I think the degree of carelessness attaching to it could not be considered very great.

5190. In those instances, which have been often mentioned before this Committee, of syphilis having been communicated in various cases in France and in other countries, was it not stated that blood had been conveyed with the lymph?—The chief French writers on the subject arrived strongly at the impression that it was the blood that did it; but others who have examined the facts have not been so much impressed with that.

Some of the instructions published in our medical journals (the “Medical Times and Gazette,” especially devoted attention to it some time ago), for avoiding accidents, did not include any special rule as to the avoidance of blood.

5191. Do you think that for the future it would be very desirable that some instruction of that kind should be given?—I think it would be very desirable indeed.

5192. Do you think it desirable that the medical department of the Privy Council should draw attention to what has taken place?—Very desirable.

5193. Do you think that it is better to look those results in the face, and try to avoid them by more careful vaccination for the future?—Quite so.

5194. Have you any opinion to give with respect to vaccination itself, apart from its conveyance of disease, as to whether it is a protection or not against small-pox?—I believe so.

5195. Of course you do not mean that it is an absolute protection?—The protection diminishes in a certain series of years, at different rates, according to the age of the individuals.

5196. Do you think that after a certain number of years, it is necessary to be re-vaccinated?—Yes.

5197. At what age do you think that that should be done?—I should think, after the age of 12; at the age of about 13 or 14, it is desirable to be re-vaccinated.

5198. Have you had any experience of the present plan upon which vaccination is carried out at the public vaccination stations?—No, not at all.

5199. I suppose you know that the areas for public vaccination have been very much increased under the new system laid down by the Privy Council?—I am not familiar with any of the details upon that point.

5200. Would you suppose that, if these cases were known, the poor would feel rather afraid of having their children vaccinated with lymph taken from children of whom they know nothing; does it not put the poor in rather a worse position than the rich in that respect?—It does, certainly; but I do not think that there will be any material difference; one of those series of cases has occurred to very respectable persons and not among the poor.

5201. A person in good circumstances, employing his own medical man to vaccinate his child, has a better opportunity of getting the lymph taken from a healthy child, has he not, than a poor person taking his child to a large vaccination station would have?—I am not sure that there would not be other circumstances which would make the two cases very nearly equal; at a large vaccine station a vaccinator has a larger selection than anyone in private practice.

5202. But in the selection at the vaccine station, though it is larger in number, you would judge from appearances, would you not, rather than from a knowledge of the family to which the child belonged from whom the lymph was taken?—I think something may be done by a knowledge of the family; and I think that in future the vaccinator should not take the first child of the parents, but should take a second or third child, with the knowledge that those parents had had other healthy children. In each of the recent cases

cases it was the first child of young parents which was the source of the disease.

5203. Would you consider that that also should be an instruction to vaccinators?—I think it would be a good one.

5204. Supposing that you had a child of your own to be vaccinated, would you object to send it to a public vaccination station?—If I knew the medical man I should have no objection at all.

5205. Do you mean if you had confidence in his performing the operation well, or do you mean confidence in his selection of a proper child to vaccinate from?—If I had confidence in his exercising good care in the selection of the child and in the mode of his performing the operation, I should have no objection.

5206. I understood you to say that one of those children from whom syphilis has arisen, had every appearance of being a healthy child; would it not be rather difficult to have any certainty as to the health of the child?—I quite admit that it would be impossible to be absolutely safe, but my impression is that the risk is exceedingly small.

5207. But, on the whole, do you think that greater care will have to be taken for the future in carrying out vaccination?—Yes.

5208. Notwithstanding what has come to light, do you still think that vaccination ought to be carried out under the compulsory law?—Yes, I do.

5209. You say that you would not vaccinate from the first child of a family, but from the later children?—I think that the avoidance of the first child will give additional security, with the knowledge that the first child has remained healthy. If the parents have now one child which is a year or two years old, and is healthy, I think their second child will be very much safer.

5210. It has been suggested that cases might occur in which the parents might contract syphilis after the birth of the first child?—It is quite impossible to exclude such risks, but it is the first child in which there is the most danger.

5211. Mr. *Candlish*.] What is the advantage of selection if the lymph, even from the arm of a syphilitic child, cannot convey syphilis?—One wishes to take double precautions, both as regards the child vaccinated from and the conveyance of blood; I do not believe that if a child were syphilitic and no blood were taken, any risk would be run.

5212. Have you such confidence in your own opinion that syphilis may not be conveyed by pure lymph taken from the arm of a syphilitic child, as that you would feel justified in sending your own child to be vaccinated from such a child?—I would not have my own child vaccinated from a syphilitic child, even with the purest lymph, although I do not believe that there is any risk. It is a thing which it is quite unnecessary to do.

5213. If there were no risk, where would be the objection on your part?—One cannot make things matters of certainty; I only give my opinion that there is no risk.

5214. Mr. *Jacob Bright*.] I understand that you consider that the risk of conveying syphilis by vaccination is much greater than it was believed to be some short time ago?—No; my opinion is not much modified; other facts similar to these which have happened in England now for the first time, have formerly happened abroad, and have been equally well established; I still believe in the possibility of it, and in its extreme infrequency.

5215. But still the possibility was almost denied some time ago by medical men, was it not?—I doubt that; I know that a large number of medical men thought it not possible; but those who have examined most into the question have recorded their opinions in favour of its possibility.

5216. You say that you believe in its extreme infrequency; you are probably aware that we have had some persons giving evidence here, and a great many others who wished to give evidence here, to exhibit what they believed to be serious disease produced by vaccination; may it not be from what you say, that in many of those cases this very disease was produced by vaccination?—I see cases of the kind, which you allude to, every week at the skin hospital and elsewhere; patients come in suffering from diseases which the parents and others refer to vaccination; but I can only say that, except one unimportant skin rash of infants, which does often follow vaccination, I have never seen any ill results which I believed to be due to vaccination; that skin rash is very easily cured, but, in children with delicate skins, it every now and then comes out.

5217. With regard to the effects produced by vaccination, I think it is always admitted to be a disease which is produced?—Undoubtedly.

5218. When any individual child or grown up person takes a disease, speaking in common language, we say, do we not, that the patient requires strength to throw off that disease, or in other words, that a person in strong health would throw it off, where a person not in strong health would not throw it off nearly so easily?—Those specific fevers are often very peculiar in that respect; they often pass through a patient not in good health very well indeed; they are of spontaneous curability.

5219. If you took a dozen strong well-nurtured children who had plenty of nutritious food, and a dozen children of an opposite character who had been badly nurtured, and therefore were not strong in health in consequence, do you not think that the latter would have a greater difficulty in getting rid of the effects of vaccination than the former?—Yes, to a slight extent.

5220. Do you not think that a child a month old would have greater difficulty in getting rid of those effects than a child six or seven months old?—No, I have my own children vaccinated within a month after their birth, and I think that they get through it better.

5221. Do you know Dr. Borekhardt, of Manchester, who has to do with the children's hospital there?—I do not.

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MR. HIBBERT TOOK THE CHAIR.

Mr. JAMES NEIGHBOUR, called in; and Examined.

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5222. *Chairman.*] YOU are the Sanitary Inspector and Vaccination Officer of St. Luke's, Middlesex, are you not?—I am.

5223. How long have you held that appointment?—I have been sanitary inspector nearly six years.

5224. How long have you held the appointment of vaccination officer?—Two and a half years.

5225. Have you during that time had much experience of the working of the Vaccination Act?—I have.

5226. Will you state to the Committee the plan which you follow in looking after cases when the vaccination is to be done?—I go to the registrar of births once a month, and get a list of the persons from whom the vaccination certificates are due. They are then entered in a book, and I then visit the parents and find out the cause why the certificates have not been returned to the registrar.

5227. What do you do when the certificates have not been returned?—In the case of children who are not vaccinated, I serve the parents with a printed notice to get the vaccination done in about seven or eight days, and in cases where children have been vaccinated, and the parents have neglected to forward the certificates, I serve them with a notice also to forward the certificates to the registrar.

5228. Then, of the results you make a return half-yearly, do you not?—The registrars make a half-yearly return to the board of guardians, and the names are then sent on to me to show why the children have not been vaccinated, or why the certificates have not been returned.

5229. Do you meet with many obstacles and difficulties in carrying out the Act?—No; not a great many.

5230. Have you had to take many proceedings against the parents?—Not any.

5231. Are there any large number of children in your district at present unvaccinated who ought to be vaccinated?—We have no children in the parish at the present time who have been born since the Act was passed who are not vaccinated, except those who are unfit.

5232. Then so far as your own district is concerned, the Act appears to have been carried out extremely well?—It does.

5233. Have you your own half-yearly returns?—Yes.

5234. What do they show?—In the half-yearly return which was made to the guardians on the 1st January 1871, there were 167 persons returned as not having sent certificates to the registrar.

5235. Did you inquire into those cases?—I did.

5236. With what results?—I found that 46 children had been vaccinated, but that the certificates had been mislaid or lost, 4 had died, 22 were ill and not in a fit state to be vaccinated, and 92 had left the parish and could not be found. There were three residing within the parish who had not then complied with the Act.

5237. Did you take any proceedings against those three?—I served the parents with a notice, and it was done.

5238. With respect to the 92 who had left the parish, had you given them notice to have their children vaccinated before they left?—I had not. In most cases they had left before the children were three months old.

5239. Were they cases of people who left the district for the sake of avoiding the vaccination of their children?—I should think not.

5240. Is there any feeling at all amongst the people of your district against vaccination?—Very little. There may be very little feeling against it among the most illiterate and the very poor, but we generally manage to get over the difficulty very easily.

5241. Have you had the epidemic at all severely in your district?—Yes, we have had it rather severely, but not so severe when compared with other districts.

5242. Have many fatal cases occurred?—Not so very many.

5243. How many cases have you had?—For the year 1870, we had 11 deaths from small-pox.

5244. Do you know how many cases of small-pox occurred in your district in that year?—I could not give the return for the private practice, but I can give the five out-door medical officers' districts. In the year 1870, there were 60 cases.

5245. Were the 11 deaths among those 60 cases?—Some of them were.

5246. Can you state with respect to the vaccination of the persons who had the small-pox, whether they were vaccinated or unvaccinated?—I cannot.

5247. Do you know anything with reference to the deaths, whether they were people who were vaccinated?—With regard to the 11 deaths five were returned as unvaccinated, one as vaccinated, and as to five, it was not stated whether they were vaccinated or unvaccinated.

5248. Does any difficulty arise from the registration of births not being compulsory?—It does; I find it so.

5249. What is the difficulty?—Some three weeks or a month ago I came across a family who were not registered. One child had small-pox, and the other four were not vaccinated, and since then all five have died unvaccinated.

5250. And you say that the first child was not registered at all?—None of the five were registered.

5251. What was the cause of that; was it from the negligence of the parent?—Quite so.

5252. From that, do you think that there are a great number of children who are not registered at all?—I should not think that there is a great number, but there are some without any question.

5253. I suppose that the present system has some defects with respect to children who are brought into your districts from other districts?—It has.

5254. How do you try to get over that defect?—We have to go to the houses; we make a house-to-house visitation for sanitary purposes, and we make that one of the inquiries, and we get at it as well as we possibly can.

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5255. In case of the removal of a parent before the vaccination of his child, have you anything to suggest as to the improvement of the law?—I think that were a person removes from a district with an unvaccinated child, that removal should be registered in some way.

5256. Do you think that notice should be given to the registrar?—Certainly, as to where the man is going.

5257. Then you must do something further beyond that; if a man goes away you must have notice sent from the registrar to the officer in the district to which he goes, must you not?—Certainly; we do that now in cases where we can ascertain it.

5258. How is vaccination performed in your district?—At a public station.

5259. Do you find any difficulties or complications arise owing to the carrying out of the Act being put into the hands of the vaccination officer, and into the hands of the registrar of births?—It would save a great deal of trouble if the vaccination officer kept the vaccination book.

5260. In fact you think that the vaccination officer should have the whole history of every child in his own book, and that he should be the person to take all proceedings?—Certainly.

5261. What is the population of your vaccination district?—The population in 1861 was about 60,000, and the area is about 220 acres.

5262. Has that population increased since the last census?—I should say that it had.

5263. And that district is attended by one vaccinator?—It is.

5264. Do any difficulties arise from having so large a district?—Not any.

5265. Do you find that the parents ever object to go to a crowded station?—No, not in any way.

5266. Have you any other suggestion to make by way of amending the law?—No.

5267. Do you think it is necessary, for the purpose of carrying out the law, to retain the present penalties?—Quite so.

5268. Mr. Holt.] Can you tell me anything as to the average number of children brought to the station for vaccination on each occasion?—Yes; from 25 to 30 each week.

5269. What length of time does it take to get through those 25 operations?—About from an hour to an hour and a half.

5270. Mr. Jacob Bright.] You mentioned that there had been 11 deaths from small-pox, and I think you said that five of those cases had been returned as unvaccinated, and one as vaccinated, and there were five cases remaining as to which there was no report; how is it that they should report so carefully with regard to the five and the one, and leave out the others?—That rests entirely with the medical men who give the certificates of death.

5271. Clearly they could tell whether any of those 11 were vaccinated or unvaccinated, because they did tell with regard to some who were unvaccinated, and with regard to one who was vaccinated; how on earth does it arise that they let the other five cases pass by without specifying that?—There is no law to compel a medical man to specify it.

5272. But does it not seem to you rather extraordinary that it should be so?—Some medical men take an interest in vaccination, and others do not so much; and where they register the

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death they record it as to whether it is vaccinated or unvaccinated.

5273. Dr. Brewer.] You have never in your own practice found it needful to prosecute any person?—No.

5274. You have always found that you could adopt means of suggestion, instruction, and direction, which were obeyed?—Yes; sometimes I have to tell the parents they would be proceeded against.

5275. Why do you consider it necessary that the penalty should be retained in the Act?—Because the penalty, no doubt, acts as a means of bringing about the vaccination of the children.

5276. I hardly understand you; you have never had to use these means, you say?—No; my meaning is, that the parents know that we should use those means unless they complied with the law.

5277. From your observation, is it from an objection to vaccination, or from their dislike to be interfered with, or from not wishing to be bothered, that the parents have refused to have their children vaccinated?—The principal cause is, that they do not want to be bothered with it.

5278. Are they at all alive to the advantages of vaccination?—Yes.

5279. Then what is the reason that they neglect vaccination?—I find where vaccination is neglected that it is principally among the very poor, and they not only neglect vaccination but they neglect everything else.

5280. It is not simply vaccination, but every other means of health that are neglected, and all other things of that sort are neglected; is that so?—Yes.

5281. And if you remind them of it, and press them to do it, they will do it?—Yes.

5282. Mr. Candlish.] Is there much small-pox in your district now?—For the four months, ending the 27th of April, there were 305 cases attended by the outdoor medical officers.

5283. How many deaths were there?—I have not the number of deaths for the four months; I may say that 21 of those 305 were under three years of age.

5284. Do you know what proportion of the 305 cases you have mentioned were vaccinated?—I cannot say; I have no means of knowing.

5285. What proportion of the 21 cases under three years of age died?—That I cannot say, because I have no means of knowing. Many of the cases are removed to the different hospitals, and then we do not know whether they live or die.

5286. What proportion were vaccinated?—Eleven out of the 21 were unvaccinated.

5287. And 10 were vaccinated?—Yes; the 11 cases, I believe, were children under three months old, and the vaccinations were not due.

5288. Then you think that a man should not leave his residence, and go from one district to another, without giving notice to the registrar?—I do, if he has an unvaccinated child.

5289. Would you make that compulsory?—I would.

5290. Would you punish a man for leaving his residence and going to another, unless he gave notice to some public officer?—Yes, if he had an unvaccinated child.

5291. Do you know anything about Bethnal Green?—I do not.

5292. You do not know whether there is more or less small-pox in other districts than there is at Bethnal Green?—I have heard that there is a

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great deal less in our district than in Bethnal Green.

5293. The cases of small-pox arising now are in the main cases of adults, are they not?—Yes, or eases over five years of age.

5294. Are they in the main adults?—They are.

5295. They would have been children 15 or 16 years of age, of course?—Yes.

5296. Then if there were three times as many vaccinated in Bethnal Green 15 years ago, as there were in your district, you would have expected much less small-pox in Bethnal Green, and much more in your district, would you not?—I should think it would depend, to a certain extent, upon how the vaccination had been performed.

5297. Have you any facts from which you would infer that it was worse performed in Bethnal Green than it was with you?—I have not.

5298. Assuming the vaccination to be of the same character in both places, if there were 15 years ago three times as many vaccinated in Bethnal Green as in St. Luke's, Middlesex, you would expect three times as much small-pox now in your district as in Bethnal Green, would you not?—Yes.

5299. Have you the birth of every child registered?—No.

5300. Do you know how it happens that you fail?—It is only through the carelessness of the people.

5301. Do you know whether or not they avoid registration in order to avoid vaccination?—I should think nothing of that sort.

5302. But you have no knowledge as to it?—No.

5303. You have no legal right to enter anybody's house, have you?—Under the Sanitary Act of 1866, we have.

5304. Does that give you a right to examine children?—No; certainly not.

5305. What right does that Act give you?—We make a house to house inspection for sanitary purposes, to see whether the premises are in a proper state, and so on.

5306. Having the right of access for sanitary purposes, might you not inspect the children?—We frequently do.

5307. Mr. Cave.] You say that your district is well vaccinated?—Yes.

5308. How long has it been well vaccinated?—About two and a half years.

5309. Not more than that?—No.

5310. Before that time, was it badly vaccinated?—I should think it was very much neglected.

5311. Do you know what the mortality was for the six years from 1858 to 1863?—I have not that information.

5312. Should you be surprised to hear that it was larger than in any other district in London?—I should not be at all surprised to hear that.

5313. Why not?—Because I believe that vaccination had been very much neglected.

5314. Your district is a very poor district, is it not?—Very poor.

5315. Out of the 60,000 people, a large majority are of the poorer class, are they not?—Quite so.

5316. How do you manage to get through that very large number of people in the course of the year yourself?—We do not have to call upon

every person who has the birth of a child registered, and not half of them have to be called upon; more than half do it without that.

5317. Then you must go to every house, I suppose, to know whether they have done it or not?—No; we get the return from the registrar of births, and as the certificates are sent in, they are entered against the names of the children.

5318. How do you find that there has been a birth in a house, for instance?—We get all the information from the registrar.

5319. Then how does the registrar know it?—Because the parents go to him to register the births of their children.

5320. But if they do not do so, what then?—Then it is not known.

5321. With this very large population of 60,000, how far can you be certain that you do get the facts, and are able to find out whether the children are vaccinated or not?—I should think that the children who are not registered are very few indeed.

5322. But you do not know even how many are born, do you?—No; we only take the return from the registrar's books.

5323. But the registrar does not know how many are born, and he does not know those cases in which the parents do not take the trouble to tell him, does he?—No.

5324. What sort of proportion do you imagine that those cases bear to the whole population?—In two and a half years I have only met with seven persons whose births have not been registered.

5325. But how can you tell that?—If I find that a child is not vaccinated, the first thing I want to know is whether the birth is registered.

5326. But how can you be certain that a greater number of children are not born without your knowing it?—There are some children, no doubt, of whom we know nothing.

5327. Have you any means of knowing what proportion they bear to the whole population?—No means.

5328. Therefore you cannot tell whether there may be a still larger number in the district unregistered and unvaccinated?—We have no means of knowing beyond making inquiries in the house as to vaccination; the first thing I want to know is whether the birth of the unvaccinated child is registered, and I have met with seven instances in which the births have not been registered at all.

5329. How do you get through such a very large population as 60,000 in the course of the year, even for sanitary purposes; can you go into every house?—We make an inspection of the whole of the low class of houses, not the respectable houses.

5330. Do you do it by yourself, or have you any assistance?—There are two officers.

5331. Do you think that you can get through all that is necessary in the course of the year?—Yes.

5332. Do you inspect more than once a year?—Twice a year.

5333. And it is in your rounds that you think you arrive at something like an estimate of the number of children whose births have not been registered?—Yes.

5334. Dr. Brewer.] I see that you are marked by small-pox; may I ask whether you have ever been vaccinated?—I have not, having had the small-pox when young.

5335. Chairman.]

5335. (*Chairman.*) Have you taken any steps in your district with respect to re-vaccination?—By persuasion.

5336. Have any large number of people been re-vaccinated?—Since January over 2,000 have been re-vaccinated by the public vaccinator.

5337. Was that done through your instrumentality?—In some instances, but not in every

one; I have here a return since the first week in September of the small-pox cases attended by the outdoor medical officer; the epidemic showed itself in St. Luke's the first week in September, and up to the 27th of April there have been 356 cases attended to by the medical officers; of that number 24 were under three years of age, 36 at 3 and under 5, 34 at 5 and under 10, 120 at 10 and under 20.

Mr. J.
Neighbour.
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Mr. EDWARD CATOR SEATON, M.D., called in; and Examined.

5338. (*Chairman.*) ARE you one of the Medical Inspectors of Her Majesty's Privy Council?—I am.

5339. How long have you held that office?—For about 10 years.

5340. What other public appointments do you hold?—I do not know that I hold any other public appointment, but I am also President of the Epidemiological Society.

5341. During the 10 years that you have been officially connected with the Privy Council, I suppose that you have given special attention to the subject of vaccination?—I have; and for a much longer period.

5342. Can you give any information to the Committee as to the state of small-pox and of vaccination before the compulsory law of 1853 was passed?—I think I can give considerable information on that point; I had better go back to the beginning. The special interest which I have taken in this matter dates back for 20 years and more. When the Epidemiological Society was founded in the year 1850, under the presidency of the late Dr. Babington, for the special investigation of epidemic diseases with a view to their mitigation or prevention, one of the first matters taken up by the Society was the investigation of small-pox in connection with vaccination, and a committee was formed for the purpose of that investigation, of which committee the late Mr. Grainger was chairman, and of which I was the honorary secretary. This committee collected information from medical practitioners all over the kingdom, as well as from official sources, from foreign governments, and so on. The practitioners to whom it addressed itself in England, were between 3,000 and 4,000, those medical men being especially selected for application who were known or believed by the council of the Society to have had much to do with small-pox on the one hand, or with vaccination on the other, or with both.

5343. When were those inquiries made?—They were set on foot in the year 1850, on the foundation of the society, but the investigation lasted a couple of years. The practitioners applied to in the United Kingdom for information were for the most part of the class termed general practitioners, and included most of the Poor Law medical officers of England and Wales. I mention this because, when the testimony which we obtained is taken along with the testimony subsequently obtained by Mr. Simon from medical men selected chiefly on account of their professional eminence, each inquiry will be seen to have been, to a certain extent, supplementary of the other; and the two together to have embraced all the so-called grades of the medical profession. Our committee sent out two sets of queries, and received replies from nearly 2,000 medical men; and on examination of the whole of the evidence which it had collected, the com-

mittee came to certain conclusions, which were submitted in the form of a report to the Council of the Society, and adopted by them. That report was afterwards communicated to Lord Palmerston, who was then Home Secretary, and printed for the information of Parliament, at the time when the Compulsory Act of 1853, which had been introduced quite independently of the Society, and without the Society's knowledge, by Lord Lyttelton, was under consideration. The inquiry which had thus been made by us was a general inquiry into the subject of vaccination in relation to small-pox, as well as a special inquiry into the state of small-pox and vaccination in England and Wales; and the conclusions to which the Society came on the general subject are given in two paragraphs of their Report, which I will read. The first is as follows: "Small-pox is a disease to which every person is liable who is not protected by a previous attack, or by vaccination. In its unmodified form it is fatal to about one in four, or one in five, of all whom it invades, and when it does not destroy life, it in many cases disfigures, and deteriorates the general health. Every case of it is a centre of contagion, and every unvaccinated or imperfectly vaccinated population is a *nidus* for the disease to settle in and propagate itself." Then the second conclusion was this: "We are ourselves satisfied, and it is the concurrent and unanimous testimony of nearly 2,000 medical men, with whom, as we have already stated, we have been in correspondence, that vaccination is a perfectly safe and efficient prophylactic against this disease."

5344. After those conclusions they made some recommendations, did they not?—We did; but if the Committee would allow me I will first state briefly the grounds upon which we came to our conclusion on the value of vaccination, and in so doing will include any more recent facts connected therewith, which it appears to me the Committee might deem it desirable to have before them. We based our conclusion upon the sufficiency of vaccination as a prophylactic against small-pox upon four grounds: the first of which was the general immunity with which it was found that individuals who had been vaccinated were able to mingle with small-pox patients. This we said that we regarded as being so well known and established that, notwithstanding the abundant evidence of it which had been communicated to us, we did not think it necessary to adduce any special illustrations of it. The Committee are well aware that in the early days of vaccination, for some time after the introduction of the practice, it was quite customary to test people who had been vaccinated both by inoculation and by exposing them purposely to small-pox effluvia. The test of exposure is in fact applied now every day when small-pox is prevalent, and when vac-

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nated persons come in contact with it. The point of view from which we took up the question is so well put in some observations which have since been made by one of the greatest medical philosophers of our time, the late Dr. Alison, that with the permission of the Committee I will read a very short extract from what he says: "The first object is to consider whether or not we have at this time, in the matter of cow-pox, a power at our command capable, if duly employed, of depriving the poison of small-pox of all fatal influence over an immense majority of mankind. And on this subject there has been quite sufficient information collected since the date of the papers which were held decisive of the question 50 years ago" (he was writing this in the year 1857), "to show that the same inference is still inevitable, and that he who disputes it is equally unreasonable as he who opposes in like manner any proposition in Euclid. Of course, when I say that there has been ample evidence to decide this question statistically, I mean to refer to cases where we have not only the negative evidence of large numbers of persons duly vaccinated not having subsequently been affected with small-pox, but the positive evidence of such duly vaccinated persons having been subsequently, most of them repeatedly or for a long time together, exposed to the contagion of small-pox, *i. e.*, placed in the same circumstances in which unvaccinated persons have been very generally affected, and many of them died of the small-pox; these vaccinated persons have nevertheless escaped, most of them, without any indication of disease." Now, the evidence which we collected from all parts of the kingdom, and from abroad, from medical men, of whom, as I said, we heard from, nearly 2,000 answered to that test; it fulfilled, precisely, those conditions that Dr. Alison has pointed out as essential for proof, namely, it was the evidence of vaccinated persons living in crowded and ill-ventilated dwellings in which there was small-pox infection, occupying the same rooms, sleeping in the same beds in many cases, with small-pox patients, mothers nursing their babies who were suffering from the disease, persons, in fact, living in circumstances in which scarcely any unprotected persons escaped, and yet they themselves were all, or nearly all, unscathed. The evidence did not go to show that there was absolute immunity for all the vaccinated; this is not the case, as the Committee are well aware; but it went to show that an immense amount of immunity from small-pox, and especially from fatal small-pox, was conferred by vaccination. This, too, is exactly the sort of testimony which, in my own professional relations with medical men, I am constantly receiving with regard to the present epidemic in London. The persons who have been directly exposed to the infection of the epidemic, who have been vaccinated, have, as a rule, escaped; the persons who have been directly exposed to the infection of the epidemic, who have been unvaccinated, have, as a rule, suffered; and this, though they were of the same class of society, and living under precisely the same conditions. The question which has arisen in this Committee of vaccinated persons escaping small-pox, not because they were vaccinated, but because they were better off, is completely answered by these examples. All inquiries that have ever been instituted have testified to the like effect. Thus, the inquiries which were made in

people's houses by Mr. Cross of Norwich in 1819, during an epidemic of small-pox in that city, referred to people under exactly the same conditions of housing and living. Mr. Cross inquired respecting 603 persons living in 112 infected houses. He found that of 215 unprotected, 200 had contracted small-pox; while of 91 protected by vaccination, only two had taken the small-pox; and of 297 protected by former small-pox, none had again taken the disease. Then, again in the more recent Cardiff inquiry in 1857, to which Mr. Simon referred in his evidence, there were found living in the same four streets 711 children, 33 of them protected by former small-pox, none of whom had taken small-pox during the epidemic then just past; 608 protected by vaccination, of whom 18 had taken small-pox, or three per cent.; 70 unprotected, every one of whom had been attacked. The vaccinated children who escaped were specially mentioned in Dr. Paine's report as in many instances occupying the same rooms, and frequently the same beds, with the small-pox cases. Then, if I may be allowed to refer to the examination of the school children that Dr. Buchanan and myself made in London in the epidemic of 1863, children who, taking them upon the whole, were pretty much of one class, out of 2,837 without the marks of vaccination, 1,010 had had small-pox, or 360 per 1,000; while out of 49,570 having the marks of vaccination, 88 only had had small-pox, or less than 2 per 1,000. One more illustration I will cite, for it is a very remarkable one; it is one that I met with a few years ago when I went into a ragged industrial school at Hull; it was a ragged school of the raggedest; the children were of the very lowest description. There was no difference of condition there. I examined in that school 170 children, of whom 33 had no mark of vaccination, and out of these 30 had marks of small-pox, some of them being awfully disfigured by it, and more than one blinded by it; there were, on the other hand, 137 having marks of vaccination, and out of those there was only one that had any marks of small-pox at all, and those marks were slight. I was looking on the child's arm; I saw that the marks of vaccination were imperfect, and I was pointing out the child as an imperfectly vaccinated child to the master of the school, when on looking up I detected some small-pox pits upon the face; that was the sole case of small-pox that was seen in any vaccinated child in that school, and I shall not forget the exclamation of the master with regard to the result of that examination. He said, "Well, if there are any sceptics, they should have been here to-day." So much for the first ground on which the Society based its conclusions as to the value of vaccination. Then the second and third grounds had reference to the general decrease in the average of small-pox mortality, just in proportion to the adoption of vaccination, and especially to the remarkable decrease that had taken place in those countries in which vaccination had been made compulsory. I am not going to dwell upon these grounds, because the Committee have had statistics on the subject abundantly before them; but I will ask the Committee to note that the statistical arguments which are advanced, are only offered in conjunction with the proof that we have independently acquired of the control exercised by vaccination over small-pox. It is not the diminution of small-pox *per se* that is adduced as proof, but it is that diminution, taken along with the proof that we otherwise

otherwise have,—the proof by inoculation of the vaccinated with the matter of small-pox, without imparting the disease; the proof by exposing the vaccinated to variolous infection, with general though not complete immunity; the proof of the wonderful modification which vaccination exercises over the course and fatality of small-pox, in those of the vaccinated who happen to contract it. It is in connection with those proofs that we refer to the altered condition of the world at large with regard to small-pox wherever vaccination has been introduced, and in proportion as it has been introduced, as being directly due to the vaccination itself. Under this head, I think I ought to refer to the circumstances of the present epidemic in London, so far as they have been thought inconsistent with the belief that the profession generally entertains as to the control exercised over small-pox by vaccination. Of course, with regard to this epidemic I need not say (for it has been before the Committee already many times), that epidemics of small-pox, like epidemics of other diseases, come and go, according to laws which we have not yet made out; that they vary in their intensity, and vary in their power of diffusion; and I have no explanation to offer why this epidemic should be so much more intense than the epidemic of 1863, any more than I can tell why the epidemic of 1863 should itself have been much more severe than the subsequent epidemic of 1866-67; or why one cholera or scarlet fever epidemic should be so much more fatal than another cholera or scarlet fever epidemic. What really concerns us is, that the vaccinated and unvaccinated have stood, in regard to this epidemic, exactly in the same relative position as in regard to all previous epidemics. The Honourable Member for Leicester put a question the other day, as to the proportions of this epidemic; and I have endeavoured to work out, as far as I could, what might reasonably be considered the proportions of the present epidemic up to this time. I find that from the 1st of October, which is about the time when the epidemic began, to the 29th of April, the deaths from small-pox, in London, have been 3,996; in round numbers, 4,000. The Registrar General states, in his last weekly report, with regard to 2,662 of those deaths, that 1,212 have been returned as unvaccinated; 973 as vaccinated; and 477 as not stated whether vaccinated or not. Then he points very justly to great fallacies as regards those returned as vaccinated. I think, if any Member of the Committee will question me by-and-bye, I shall be able to give abundant evidence that numbers are returned as vaccinated under conditions which are wholly fallacious, and who ought not to have been returned as vaccinated at all. But I assume that the 973 were vaccinated, as they are returned, and that the 1,212 were unvaccinated. If we apply those numbers to the whole 4,000 deaths, that is 55 per cent. unvaccinated, and 45 per cent. vaccinated —

5345. Dr. Lyon Playfair.] That is applying it to the unknown quantity?—I am going to apply it to the unknown quantity. We should have 2,200 deaths in the unvaccinated, and 1,800 deaths in the vaccinated. Then I allow five cases for an unvaccinated death. In the small-pox hospitals the mortality has been 44 and 45 per cent., but I do not take that. I will allow a much larger proportion of cases to deaths outside the hospitals than in the hospitals; they get 0.37.

the worst cases in the hospitals no doubt; so that I will allow five cases to a death, which is an extreme allowance. That would give us 11,000 cases in the unvaccinated. Then for the 1,800 deaths among the vaccinated, I will still make another extreme allowance, and will suppose that the deaths were only five per cent., instead of the seven or eight per cent. that have been returned from the hospitals, and I will say that one death represents 20 cases. That would give us 36,000 cases of small-pox among the vaccinated, which, added to the 11,000, would make altogether 47,000 cases. That, I beg to say, is an entirely extravagant calculation in my view. I have put everything in the extreme, so that you might have the worst as it were before you. Now the population of London, you are aware, is three millions and a-quarter, and you have upwards of 2,000 births every week, so that you have, first, above 20,000 children in London under three months of age, the large majority of whom are unvaccinated, and then if you take only $2\frac{1}{2}$ per cent. of the rest of the population as being unprotected, you have 80,000 more, or altogether about 100,000 persons entirely unprotected. To those you have to add the number (which as we know is a large number) of persons who are imperfectly protected; so that it appears to me, although it is not a very hopeful thing to put before you, that there is pabulum for a great deal more small-pox death, without calling in question the value of vaccination at all. I would merely ask the Committee to contrast the mortality of this epidemic, entirely exceptional as it is in modern times, with its 4,000 deaths in seven months, or at the rate of less than 7,000 in the year, in a population of 3,250,000, with what was the annual average a century ago, exceeding as it did, 2,000, in a population not a fifth part of what the London population is now. Four thousand deaths in seven months, if taken for the year, would give us, on the present population, 2,100 deaths per 1,000,000 persons living as the mortality of the present exceptional epidemic. But the small-pox mortality from the year 1746 to the year 1755, averaged yearly upwards of 3,000 per 1,000,000 of population; and half-a-century earlier than that, and before the inoculation period, was 3,139 per 1,000,000. Then, if in reference to the small-pox mortality we have actually lately sustained, you remember the statement that Mr. Marson made the other day when he was before you, of the very small number indeed of persons who have been properly vaccinated whom he has seen die at the Small-pox Hospital during this epidemic, I think you will see that the circumstances of the epidemic itself do not in any way tend to alter the opinion that was entertained, and I think must be entertained, with regard to the protectiveness of vaccination as against small-pox. There was also a fourth ground upon which the committee of the Epidemiological Society based its conclusions, and as it is an interesting one, and has not been much referred to here, I think it well to call attention to it. It is the immunity which districts which have for long periods been well vaccinated enjoy from small-pox, when small-pox is spreading all round them, and when it is imported into them; I mean not merely absence of the disease, but non-extension of the disease, when the infection has been introduced again and again. I will cite one remarkable instance, because it is one always deserving to be quoted, and you have not had it before

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you. It is the case of a mining and agricultural district in Flintshire; a district of about 16,000 people, which has been kept completely vaccinated for the last 20 years, through the energy of one man, who has taken immense interest in the question, and through the aid which he has received from the legislative provisions for the purpose.

5346. Lord Robert Montagu.] Do you mean Mold?—I mean Mold in Flintshire; it is in constant communication with Liverpool, a place which often suffers severely from small-pox; and in the years which have passed since 1853, small-pox has prevailed on various occasions round the district of which I speak, and the disease has been imported into that district again and again. In the epidemic of 1858-59, for instance, there were repeated importations, and in the year 1864, which was the last great epidemic year in England till this present time, there were at least 30 distinct importations chiefly from Liverpool, and there were several fatal cases in the district among persons not belonging to the district, and strangers to it. But the utmost suffering of the native population, or among the regular inhabitants of the district, in the whole 14 years, from 1853 to 1867 (which is all the time for which I have an exact return, though I have reason to believe the district has kept quite as free from small-pox since), was four cases of natural small-pox in children, who had not passed the period lawfully allowed for the performance of vaccination; a fifth fatal case in a child born with the disease, its mother having modified small-pox at the time of her confinement; and a few modified cases in persons who came directly in contact with the imported cases, but from whom the disease did not spread. I have all the particulars of that district, and therefore I have cited it. I will not trouble the Committee by citing others, but there are many districts of that kind in England.

5347. Chairman.] When you speak of that as a well-vaccinated district, does that mean that every child that is born there is vaccinated?—It does; and not only so, but they take a great deal of pains to get what I may call the back population vaccinated. From 1853 up to the present time, all the children born and remaining in the district have been vaccinated. I have not got with me a complete return of this to the present time, but I have the return here for 13 years, ending the 30th September 1866. The total number of entries in the registrar's register of vaccinations for that period was 6,925; but 324 of these entries were of children not born in the district, and therefore have to be subtracted, leaving 6,601 for the births of the district.

5348. Lord Robert Montagu.] It was through the energy and tact of the doctor, I believe, that this was brought about?—It was.

5349. Was not Swansea, in South Wales, a similar case?—A great deal was done there, but not so much as in this case. There are a great many such cases, but I have not prepared myself with them, because I only wished to illustrate the thing.

5350. Both those cases received a special recognition from the Privy Council, I believe?—Yes. Of those 6,601, births 5,784 had been successfully vaccinated; 202 had left the district before vaccination; 600 had died previous to vaccination; four had had small-pox previous to vaccination

(those were the four that I alluded to in my statement just now), and there were 11 children remaining over for the next year's vaccination. Of course it is a work of years to build up a district to the state in which Mold is; but the whole kingdom of Scotland is now being built up in that way. They have an account in Scotland now of all the children born since the 1st of January 1864; they cannot go back beyond that; as Dr. Wood stated, they cannot tell what the state of the older population is; but as to the population born since the 1st of January 1864, they know its condition in regard to vaccination. That is the condition into which we are, I hope, soon to get in England, though we began at a considerably later date than that at which they began in Scotland. Thus, I have gone over the general grounds upon which the Epidemiological Society based the conclusion which I have already read on the value of vaccination as protection against small-pox. Now I will go to the point of the Society's inquiry into the neglect of vaccination existing in England at that time as affecting the small-pox mortality, a mortality much higher then than it has been since, excepting always this epidemic. At that time (this was in the years 1850, 1851, 1852) the Society obtained a return of the small-pox in London for 13 years, and they found that the deaths had been on the average 913 per annum, and that small-pox was the seventh of all diseases in the order of fatality in London. They found that in the eight years for which only they could then get information from the Registrar General with regard to the small-pox mortality in the kingdom at large, the annual small-pox deaths of England and Wales had averaged above 7,500. They found with regard to this mortality, that it occurred chiefly in early life; that 11 per cent. of it was under four months of age; 25 per cent. under one year of age; 75 to 80 per cent. under five years of age; and that exactly the same was the case with regard to the small-pox mortality in Scotland and Ireland; three-fourths or four-fifths of it taking place under five years of age. Then on proceeding to inquire into the state of vaccination, they found that it was a common thing, and was indeed the rule as regarded public vaccination at all events, to leave the performance of vaccination until children were above a year old, or two, three, or four years old, and often, indeed, until small-pox came as an epidemic into the various localities. The state of the kingdom in this respect then was, that people who were thoughtful and prudent, and really anxious about the vaccination of their children got it done early, just as we get our children vaccinated early now; but others (and they were the majority) thought or cared nothing about it, and left it till what they considered a convenient time, or till they got frightened by the small-pox appearing. Various illustrations, with which I need not trouble the Committee, were given in the course of the Society's Report, showing how vaccination was thus neglected. Here is a case at St. Alban's; another at Windsor; another at King's Norton; and they might have been multiplied to a great extent, showing how habitually vaccination was neglected until small-pox came. Our correspondents, especially those who were public vaccinators, represented to us the extreme danger of this state of things: that though there had been at work, ever since the year 1841, a national system of gratuitous vaccination, under which a great deal had

had been done, they had not been able to surmount this difficulty; and in answer to the inquiries that we made of them, as to what further provisions were necessary, we got the almost uniform reply that, unless you have some sort of obligation laid upon the people, some degree of compulsion to have the thing done, you never will have it done otherwise than it was then, that is to say, by people waiting until small-pox came, and then all being vaccinated in a hurry, in a panic. Those were the circumstances under which we gave our recommendation, that vaccination should be required to be done under a pecuniary penalty at an early age. That was the principle which was carried out in the Compulsory Act of 1853, which, as I have said, was not introduced by the Society, but was introduced quite independently of it, though the Society gave all the assistance it could to get that important principle adopted.

5351. *Chairman.*] What were the provisions of the Act of 1853?—The main provision was that children should be vaccinated within three months of birth, under a penalty not exceeding 1*l*. I ought to have mentioned that one of the things which we particularly inquired about of our correspondents was, what was the feeling of the people through the kingdom with regard to vaccination; whether it was opposition to it, or whether it was apathy and indifference, which caused them to neglect it; and without reading to you fully what is said here, I may state that we had almost uniformly the reply that the main obstacle was simply apathy and indifference; that there were objections, no doubt, which were chiefly of two kinds, some people holding vaccination not to be a sufficient safeguard against small-pox, and some holding that it made the children ill, and was the means of introducing diseases; but that these objections were not the main obstacles, and were not held to such an extent as to make them serious obstacles to the general adoption of early vaccination, but that apathy and indifference were the main obstacles. And when I put before you the results of the first year's working of the Act of 1853 I think the facts will strongly bear out the statement that indolence and indifference were the causes of the neglect.

5352. Will you state the results of the Act of 1853; first upon public vaccination, and then upon small-pox mortality?—First, with regard to the public vaccination: if I take the four years from 1848 to 1852, that is the four years immediately preceding the Compulsory Act, I find that the annual public vaccinations under one year of age, averaged 180,960, that is 31·8 per cent. of the registered births of those years. The vaccinations over one year of age averaged 185,139 a year. In the first year's working of the Act of 1853, in the year 1854, instead of 180,960, which had been the number publicly vaccinated under one year of age on the average of the four preceding years, there were 408,824 children under that age done; while the number vaccinated over one year of age rose from 185,139, which had been the average of the four preceding years, to 290,111. The fact was that the people, having to bring their babies under the compulsory law to be vaccinated, brought also their elder children, to whom the compulsion did not apply. It was an entirely voluntary thing on their part to bring their elder children; and I think that tends to show that the neglect to have their children vac-

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inated had not arisen from any objection on their part to vaccination, but that they had simply let the thing go by, and that that only had been the reason of those children not being done before. This was the first spurt of the new law, and to some extent was temporary only, because the public vaccinations have not continued since altogether at that rate. I have here the returns of the public vaccinations for the last 10 years, and I will read them to you year by year, because they will show what the permanent gain has been. You will compare them with the 31·8 per cent. of the births, the average before 1853. In the year ending Michaelmas 1861, 48·3 per cent. of the births were publicly vaccinated under one year of age; in the year ending Michaelmas 1862, 48·4 per cent.; in the year ending Michaelmas 1863, 54 per cent. The great epidemic of small-pox increased the number of vaccinations that year: whenever there is an epidemic, the vaccinations will increase. In the year ending Michaelmas 1864, the proportion was 49·7 per cent.; in the year ending Michaelmas 1865, it was 48·4 per cent.; in the year ending Michaelmas 1866, 45·9 per cent.; in the year ending Michaelmas 1867, 46·5 per cent.; in the year ending Michaelmas 1868, 50·4 per cent.; in the year ending Michaelmas 1869, 52·6 per cent.; in the year ending Michaelmas 1870, 50·4 per cent. The average of the whole 10 years being 49·46 per cent., or, in round numbers, 50 per cent. of the births. There have been some wild and extraordinary statements made to the Committee about half the population being unvaccinated. You perceive however, from these returns, that without making any deduction whatever for deaths, 50 per cent. of the births were vaccinated by the public vaccinators alone, year by year, within the first year of age. Then, there would be another 15 or 16 per cent. to add for vaccinations performed yearly by the public vaccinators on children more than one year old; and when you take into account, besides, the immense amount of private vaccination that there is in the country, you see how utterly baseless those statements are.

5353. *Dr. Brewer.*] You mentioned the public vaccinators and the private vaccinators; you did not make any mention whatever of any other source of deduction from the vaccinated, did you?—I was not going into the general question, because I thought probably the Committee had had enough of that, but, of course, I am quite ready to do so if it is wished. The numbers I have given are those vaccinated by the public vaccinators only, and have nothing to do with the private vaccination at all. Next, with regard to the results of the Act of 1853 on the small-pox mortality, I can only give the average deaths from small-pox up to the end of 1868, but I hope, in a day or two, to be able to give them up to the end of 1870. Up to the end of 1868, they represent a diminution from 304 per million of the population per annum, which had been the annual small-pox death-rate from 1841 to 1853, to 184 per million of the population per annum, which was the death-rate from 1854 to 1868 inclusive. The returns for 1869 and 1870 will reduce the 184 somewhat considerably, but then again those for 1871 will of course put it up; but even then, not to anything approaching what it was before 1854. The results of the Act of 1853 have been especially seen upon the small-pox mortality of the young, as might be expected from

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the vaccination being fixed at the early age at which it was. Instead of the small-pox mortality under five years of age, being 75 to 80 per cent. of the total small-pox mortality, as it used to be formerly, it is now only 55 per cent.; and you find that illustrated still further in what has been and is going on in Scotland, where by this time all the population under five years of age, except such as being under six months of age or thereabout have not yet arrived at the time for vaccination, may be taken as vaccinated. During the small-pox epidemic they had at Greenock, two or three years ago, before they had been able to get quite to the period at which their population under five years old would be all vaccinated, they still had a sufficiency of them vaccinated to alter the per-centage of small-pox deaths under five years of age very materially: instead of being 55 per cent. of the total small-pox mortality, it was only 36 per cent. And now, a year or two later, in the epidemic in Glasgow, the proportion which the small-pox deaths under five years of age up to the present time has borne to the total small-pox mortality has been only 28 per cent., and for aught we know, all those deaths under five years of age may be in children under six months of age, and who have not, therefore, come under the operation of the law. There were, therefore, these two results of the Act of 1853: there was an immense increase in the proportion of vaccinated at an early age, and there was an immense decrease in small-pox mortality chiefly among young children. That was what the Act of 1853 accomplished; on the other hand, there was a great deal that it failed to accomplish.

5354. *Chairman.*] Was inquiry made by the medical department at the Privy Council, into the working of that Act?—Yes. The continuance of small-pox, and the general knowledge the department had that vaccination was still much neglected, caused an inquiry to be made, which was continued from 1860 to 1864, and extended to every vaccination district in England. Each of these districts was visited by an inspector, and a report made as to the state of vaccination in it. Perhaps the shortest way of giving the general result will be to read what Mr. Simon said on the subject in his 5th Annual Report before the inquiry was absolutely completed, but when it was nearly completed. He stated that there was a very great neglect of vaccination, and that “again and again the inspectors have come upon cases where there was conclusive evidence of extreme local neglect of vaccination. Among the elementary schools which they visited, schools were numerous where the unvaccinated proportion of scholars was from 29 to 30 per cent. of the whole; in more than a few cases it was from 30 to 40 per cent.; in some, it was from 40 to 50 per cent.; and in one case, that of Penn in Buckinghamshire, it was as high as 55½ per cent.” I cite that particularly now, because I believe it was the passage which was quoted in the House of Commons, and which has been used as evidence, that 50 per cent. of the children of England were found on this inquiry unvaccinated; but I think you will see that there is no statement at all like that in the report to which I am referring. There were certain districts in which there was that amount of neglect of vaccination, but there was also a large number of districts which were very well vac-

nated. That was the real state of the country, many districts were very well done, and many very ill done.

5355. *Lord Robert Montagu.*] As the passage in my speech in 1867 has been alluded to very much, I had, perhaps, better ask you whether these were the words that I used: “It had been ascertained that in elementary” (I did not say all) “and workhouse schools, from 20 to 30 per cent. of the children were not vaccinated; in some cases as many as from 40 to 50 per cent. had not been vaccinated”?—If your Lordship used those words, they would require a little correction; it should be “in many elementary schools,” because it was not by any means the general result of the inquiry that we found 20 or 30 per cent. of the children unvaccinated.

5356. It is possible that in correcting the report of the speech, that might have escaped my notice?—Most likely it was so. We found that a large number of local authorities were doing their duty well, and were keeping their children well vaccinated, and they complained very much of the imperfect state of the law which did not enable them to carry things out as they wished; but there was a very large number of other districts and unions where the thing was very greatly neglected, and very badly done. The general result of that inquiry led to the introduction of a Bill in 1866, but ministerial derangements caused it to be put off, so that the Bill was not passed till 1867.

5357. *Chairman.*] Are you prepared to state the difference between the Act of 1853 and the Act of 1867?—Yes; the Act of 1853 required that children should be vaccinated, but it did not, like the Act of 1867, make it the assigned duty of any local authority to see that they were vaccinated; that was the first difference.

5358. It required children under six months of age to be vaccinated, did it not?—Under three months of age.

5359. Did it say anything with respect to the older children?—Not the Act of 1853; but the Act of 1867 introduced a provision for securing the vaccination of children born before that Act came into operation, and for recurring penalties. Only one penalty was exactable under the Act of 1853.

5360. *Sir Smith Child.*] The amount being the same?—The amount being the same. Then, the Act of 1867 provided a proper registration machinery (the want of which had been a great defect in the Act of 1853), on exactly the same principle as had been found to work in Scotland, and it further removed various obstacles of detail in the Act of 1853, such as the provision under which, before you could take proceedings, you had to prove that you had given a notice to the parents, &c. Those were the chief differences between the Act of 1867 and that of 1853, *quoad* compulsion, though there were also differences in regard to other things.

5361. *Chairman.*] What has been the working of the Act of 1867?—The Act of 1867 was to come into operation on the 1st of January 1868 as regards parents, and as regards authorities, it was to take effect from July 1868; that is to say, the first list of defaulters under the Act would be presented to each local authority in July 1868. There were many local authorities who took action as soon as they were required to do so; they obtained their lists, and they looked after their vaccination from July 1868, the very beginning

beginning; but others were more or less tardy. I think the names of some unions that have been at work from the beginning, were handed in the other day, among them being Leeds, Wigan, Lancaster, Exeter, and St. Luke's, Middlesex, the officer of which you have had before you to-day, and there were a great many besides. Other unions delayed longer; and the great ground of delay with most of them, where there was delay, was this, that they could not make up their minds to appoint an officer to look after the work. The 27th section of the Act imposes upon guardians the duty of seeing that the children are duly vaccinated. The 28th section empowers them, if they think fit, to appoint a person or officer to see that it is done; but it does not require them to do this; such appointment is merely permissive. A number of them wanted to do the work by temporary expedients; they thought that in a little while the Act would work itself. Our department had urged on them from the first that it would be essential to the working of the Act that there should be in each union somebody whose special duty it should be to look after the vaccination, and that the Act would not work otherwise. However, that, of course, involved some little expense, and therefore it was very much conned over, and a very great number of boards hesitated, at all events for the time being, at making fixed appointments. But I may mention that out of 260 unions, all of them but six extra-metropolitan, inspected last year, I find by the returns that only 120 were reported as not having vaccination officers at the time the inspector went to them. A large number of these have got their officers since, but others have not. In the metropolis there was immense delay in getting the thing into work.

5362. What has caused the delay in the metropolis?—There was that same consideration that I mentioned just now.

5363. Was it an objection on account of the expense?—I do not know that the boards in the metropolis much hesitated as to appointing a person on that ground, but I am not sure that at first even the Poor Law Board thought it was indispensable that a person should be appointed, and there were difficulties in that way. Then there was another difficulty, viz., that a great reconstruction of unions was going on, and of course things being in a transition state they waited till they got settled.

5364. Is there not some clashing of authorities in the metropolis, with respect to the appointment of those officers?—I think not.

5365. Do not the vestries in some instances appoint the vaccination officer?—No, not that I know of; the vestries of the metropolis have nothing whatever to do under this Act.

5366. They appoint sanitary officers, do they not?—Yes, they appoint sanitary officers.

5367. And in many cases the sanitary officer and the vaccination officer are the same, are they not?—You had an instance before you to-day, where the sanitary officer acting under the vestry of St. Luke's is also the vaccination officer acting under the board of guardians of the Holborn Union, but he holds two separate and distinct appointments from two separate authorities. In some of the places like St. Luke's and Poplar, we got into good working very early, whereas other places were very late in coming in, so that many of the unions were only just getting their officers to work as this epidemic came. The epidemic

came a great deal too quick upon us; there was no time for getting prepared beforehand.

5368. Do you know whether all the unions in the metropolis have now appointed vaccination officers?—I will not answer offhand with regard to one or two of them, but generally, except one or two, all have done so. When I except one or two, I do not know that they have not done so, but I could not answer the question offhand. I should have to inquire with regard to Woolwich, for instance, and with regard to Hampstead. Taking the kingdom generally, the Act is now really on the whole getting into very good working, and is working with little or very little opposition that I know of, except such opposition as is, what I may call, suggested opposition. I find wherever I go, and the inspectors of our department find wherever they go, that the people generally, with individual exceptions, make no sort of difficulty whatever about it, they comply readily enough.

5369. Is it your opinion that a large percentage of the number of children born in each year are vaccinated?—Certainly.

5370. Are you able to state what the percentage is?—No; I should need returns for the whole kingdom.

5371. Can you state what it is for the metropolis?—I could not tell you what it is for the metropolis; and I do not regard the metropolis as having come under the Act as a whole until at all events the end of 1870.

5372. You stated, did you not, that you thought that the Act was being well worked in the metropolis?—I was departing from the metropolis then. It is getting into good working, no doubt, in many of the unions in the metropolis; but I was stating the working as regards the whole kingdom, from the returns which we get concerning the unions which are visited successively by our inspectors. I have before me a return from a few unions which were lately visited. You had the case of Leeds read to you the other day, where there were 5,499 births in the two years ending 30th June 1870; 4,681 of those being since certified as vaccinated, and all the difference being accounted within two per cent. Now, just to show you that that is not a solitary case by any means, here is the Northwich Union for the same period, in which there were 2,863 births, of whom 2,781 have been certified as vaccinated, which leaves a very small margin indeed. Then there is the Clutton Union, where there were 1,467 births, of whom 1,320 have been certified as vaccinated, which again leaves a very moderate margin. At Frome, there were 1,514 births, and 1,321 of them certified as vaccinated. At Congleton there were 1,791 births, and 1,649 registered as vaccinated. At Witney, there were 1,602 births, and 1,483 registered as vaccinated. At Gloucester, there were 3,000 births, and 2,550 registered as vaccinated: there is a special note in that case, that those who are remaining over are only those which have just come into default, and were being looked up. At Cockermouth, there were 3,370 births, and 3,093 registered as vaccinated. Without numerical returns, I could give you a large number of other places, where the vaccination of children born under the Act is practically complete, as Manchester, Chorlton, Chorley, Gravesend, Huddersfield, Reigate, Wandsworth, Godstone, Kingston-on-Thames, Milton, in Kent, Thanet (which includes Margate and Ramsgate), Ellham, which

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Mr. E. C. includes Folkestone, which I knew for many years as one of the worst vaccinated places possible, but which is completely vaccinated now, as regards its young population.
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5373. In the places to which you have referred as places where the Vaccination Act has well been carried out, has there been any difficulty in carrying it out so successfully as you have stated?—I have not heard with regard to any one of those places which I have mentioned to you, of any difficulty. The vaccination officer of Leeds says, that he has no difficulty in administering the Act. That does not mean, of course, that nobody objects, or that no proceedings have been taken; there may have been difficulty, of course, in individual cases. I may mention that the Leeds vaccination officer has reported to me that he is just finishing his last quarter's work, and will be able again to return a most satisfactory account thereof; that he had not found it necessary to issue one summons in that quarter against any case; neither had he had to call into force the penal clauses of the Act in any one case of the previous quarter's returns.

5374. Mr. Alderman *Carter*.] You know, I suppose, that the question has been very fully discussed by the Leeds Board of Guardians several times?—Yes, no doubt; and we know that Leeds is a place where there are two or three who are what are called standing out in the matter. Another case is that of Manchester. I happened to be at Manchester at the time when Mr. Candlish was about to introduce his Bill last year, and knowing that Manchester was, to a certain extent, the head quarters of the League, I inquired of Mr. Harrop, the clerk to the guardians of Manchester, whether they had had in that union any prosecutions for non-compliance with the Act. He informed me that not only had they had no prosecutions for a long while, but that they had quite cleared the last list without having had to take proceedings in any single case. I said that I was very much gratified to hear that that was the case, for I had expected to find that in Manchester a very great outcry was raised against the Act. Then the other day I was at Liverpool, and I inquired of Mr. Hagger, the very able clerk there, as to the working of the Act since they had had their inspectors at work. They did not begin to work very early there; but now they have been at work for a considerable time, and have brought up their lists, and they have not had occasion to take proceedings in any case. There were two cases where they thought that they might have to do so, but, with a little talking to, the people came round. We had a good deal of trouble with Sheffield at the time when the Act came in.

5375. Lord *Robert Montagu*.] I believe that there was a man of the name of Ironside there, who gave a great deal of trouble?—There was; but he is gathered to his fathers. Sheffield has been a fearful place in reference to its epidemics of small-pox. In 1857–58 they had an epidemic with nearly 500 deaths in the Sheffield part of Sheffield. The whole of Sheffield is not in the Sheffield Union; a great deal of the town is in what they call the Eccleshall Union; but in the Sheffield district alone they had nearly 500 deaths in a population of about 128,000. Then in 1863 and 1864 they had another epidemic with 500 deaths. In 1868–69, which was just at the time when the new Act was coming into operation, they had a third fierce epidemic, which

caused 400 deaths or more altogether. We had to remonstrate with them about the carrying out of the Act, and to get them to appoint an officer, which they did. I wanted to know what the state of feeling was with regard to Sheffield now, and I wrote to one of the registrars there, who at one time was the vaccination officer there, and who knows well the state of the place; and I learned from him that the opposition to vaccination in that town has been fostered by what he terms the medical botanists and their friends; but that the hostility to the practice does not in any way prevail extensively; but, on the contrary, that the opponents of vaccination are greatly lessening in numbers; and he gives it as his opinion that one has nothing to do but to go on, and that the whole opposition will die away. At all events, we know that we are getting the population in Sheffield well looked after now; I have not heard with regard to the proceedings taken there, but I do not believe that there has been occasion to take many proceedings there.

5376. I believe that the opposition in Sheffield, which was carried on by Mr. Ironside and others, was not against the efficacy of vaccination, but against the compulsory nature of the Act, was it not?—That is very possible. I do not know much about Mr. Ironside myself, but there were people in Sheffield (a man of the name of Orton, and others) who were just as much opposed to vaccination as they were to compulsory vaccination. There were a lot of placards abusing vaccination.

5377. The chief opposition was against the compulsory clauses, was it not?—I dare say that would be the case with regard to Mr. Ironside.

5378. The opposition was political and not medicinal, was it not?—There was some medicinal opposition too. As to the necessity of some compulsory provisions to obviate the neglect of vaccination I noticed that Sir Dominic Corrigan mentioned in his evidence that he believed that in Ireland there was no objection on the part of the population to vaccination, and that a very small fine, or probably no fine at all, would do. He said that he thought on the whole it would work without penalties. That view might have such a serious bearing on the state of things here, that I think it just and right to mention that that is not at all the view which is taken by the Irish Poor Law Commissioners on the subject. In the first place, I would note that the facilities for vaccination, and the arrangements for free vaccination, and so on, in Ireland, were just the same for many years before the compulsory Act passed as they have been since: they were just the same, for instance, in the period during which the annual small-pox mortality was 1,272 as they are now, when the annual mortality has become next to nil. The Commissioners, in one of their reports, particularly call attention to the fact, that before the Compulsory Act, up to January 1864, the number of public vaccinations of children under one year of age was considerably less than one-fourth of the total number vaccinated in each year: and as the total number vaccinated in each year at that time was only 80,000, the births being about 180,000; there were, in fact, less than 20,000 babies publicly vaccinated each year, out of about 180,000 births; whereas under the present law there are 112,000 children vaccinated every year who come under the Statute, independently of elder children, showing what the influence of a compulsory law has been. I would mention

mention that the Commissioners are very strong indeed upon this point, and in their Report in 1870, they thus express themselves: "The population of Ireland was estimated, in the middle of last year, at 5,536,217, which, on the assumption of one birth for 31 of the population, would give 178,587 births for that year. Making a deduction from this number, on account of deaths of infants under six months of age, and on account of infants vaccinated by private practitioners, the number of vaccinations by dispensary medical officers ought to have been something about 150,000, if all the children born in the year, and proper subjects for gratuitous vaccination, had been vaccinated; but the above return gives 117,912 as the number of infant vaccinations for 1869; and it must be recollected that a certain number of these were vaccinations of children born in the years ended 30 September 1865, 66, 67, and 68: to prevent the addition of successive cases year by year to the fuel thus provided for small-pox, in the event of the epidemic influence of that most fatal and most infectious disease visiting us, as it long has done, at short intervals, affords a powerful motive to use every effort to render the vaccination of all liable to the Compulsory Vaccination Act as complete as possible." then, in further illustration, I will mention that, when in some parts of Ireland the magistrates were inclined to deal with the offenders brought before them by imposing penalties which were nothing more than nominal, the Commissioners thought it their duty to make a representation to the Lord Lieutenant on the subject, and the Lord Lieutenant sent out a circular to the magistrates throughout Ireland, calling their attention to the extremely small penalties, sometimes not exceeding one penny, occasionally inflicted by the magistrates at petty sessions on defaulting parents prosecuted by the boards of guardians of the Poor Law Unions in Ireland, under the provisions of the Compulsory Vaccination Act, whereby the people were led, he said, to believe that the authorities were indifferent to the enforcement of the law; the circular contains the following passage: "I am directed by his Excellency to draw your particular attention to this subject, as the Government attach great importance to the necessity of the Statute being fully enforced, and that every means should be taken to oblige the people to take advantage of the legislative enactments as to vaccination gratuitously provided for the protection of young people.

5379. Are you of opinion that dangers would result from discontinuing the policy of the present Act?—I should say that extreme dangers would result; I presume that the result of that would be that we should be left very much in the state of things which existed before we had a compulsory Act; that is to say, that while a certain number of careful people would get their children vaccinated, a large number would delay and procrastinate, from one reason or another, until you would have the accumulations take place which took place before you had a compulsory Act at all.

5380. You have heard the evidence of many witnesses, stating that there is a conscientious objection, on the part of many people, against vaccination, on the ground that they think that it will introduce disease into their children?—Yes, I have heard that stated; but I myself do not think, and my own experience does not lead me

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to believe, that that is a largely operative cause. There are some people, no doubt, who really fancy that vaccination sometimes does harm, but I do not think that is largely operative in deterring people from coming forward.

5381. Lord R. Montagu.] You say that something is not a largely operative cause; what is it that is not a largely operative cause?—Any feeling of opposition, on the part of the people, on the ground that vaccination does the children harm.

5382. Chairman.] I suppose you know that amongst the class of people who do hold that opinion penalties have been inflicted to compel them to have their children vaccinated?—Yes; I should like to be able, if I could, to get hold of the number who really hold that opinion; that is to say, who hold it of themselves, and not because the opinion has been suggested to them, and because they are put forward in a position, which to some is almost an enviable position, that of being made public characters; I have heard of people having silver watches given to them under those circumstances.

5383. You would not say that it was a very enviable position to be put in prison, would you?—I do not know that it would not be so if the imprisonment was to result in a silver watch.

5384. Are you able to state the number of cases in which convictions have taken place throughout the country for non-compliance with the Act?—I am not at all; we have no return of that; a return could be got, no doubt.

5385. When you see that people will even go to prison rather than have their children vaccinated, do you still consider that the present Act should be maintained in its present state as far as penalties are concerned?—Yes, I think that the principle of the present Act cannot be allowed to be let go. If you had any way of letting out those who are ambitious of martyrdom, I should not object so very much to that, provided we did not relieve them of their ulterior responsibilities. I do not object at all to a certain number of penalties satisfying the law up to a certain point.

5386. I suppose that you are aware that even now under the present Act there a number of cases in which, though the parents have been proceeded against several times, the children are still unvaccinated?—There are some such cases, I know.

5387. Sir Smith Child.] Of course, if a person chose to pay the penalty repeatedly, you could not compel him to have his child vaccinated under the present law?—No.

5388. So that the law may be inoperative even with those penalties, may it not?—Yes, but the number of cases in which it would be inoperative is very small.

5389. Chairman.] Are you aware that the Irish Act has no continuing penalty, and yet that under that Act, it is possible to obtain a very large and successful vaccination?—Very large indeed, but I do not know exactly what the Irish Act does. The misfortune is that they have no proper registration system there. In the last extract that I read, you would see that the Commissioners alluded to the fact that they did not get a correct return.

5390. I believe that so far as the penalties are concerned it is similar to the Act of 1853?—Yes; and as to the registration provisions it is the same.

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5391. Lord *Robert Montagu*.] Is it not true that in Ireland the dispensary officer, that is to say, the medical officer, gets a payment for each vaccination which he makes?—Quite so.

5392. Then it is his interest to persuade mothers to let their children be vaccinated, is it not?—Yes; that is the same in England; the payment is per case.

5393. I believe that the Irish Act was passed in 1863, was it not?—The Irish Act was passed in 1863, and it came into operation on the 1st of January 1864.

5394. And, therefore, it has been longer in operation than the present English Act?—Yes; but not so long, of course, as the Act of 1853.

5395. *Chairman*.] I gather from your former reply that you do not propose any mode of escape for those persons who object to the vaccination of their children?—I have not come here prepared with any absolute proposal about it, but I never objected very much to Mr. Candlish's proposal in point of the mischief that it would do; that is to say, I never supposed that if that proposal had been adopted there would have remained over any such number of children unvaccinated as would have been an element of danger to the community.

5396. Do you not think that if you gave a mode of escape, either in that or in some other way, people would cease to receive silver watches as you have stated?—Yes; there is something in that. I think that considerable advantages might come out of that; I do not know whether that could be connected with some ulterior responsibility, such as was suggested the other day by Sir Dominic Corrigan, of requiring persons to produce certificates of vaccination before they were admitted to schools and employments; I think that we might have an ulterior check in some such way as that.

5397. Do you wish to say anything with respect to the quality of vaccination in England, as shown in the inquiry of 1860-64?—I am prepared to state what the results of the inquiry were in that respect. The quality of vaccination prevalent throughout England was a matter which had been considered very important for inquiry in connection with the statement which Mr. Marson had made, a few years before, of the imperfect way in which a number of those who came to the Small-pox Hospital had been vaccinated. It seemed of great importance to ascertain how far the vaccinated population at large were in that state of imperfect protection, which had caused so many, who no doubt thought themselves safe, to find their way to the Small-pox Hospital. Our attention was therefore very much given to that matter. But before stating results, I must make

one remark which I deem of much consequence, and it is this, that I hope the term "bad vaccination," in the sense in which we used it, has not been misunderstood, and will not be misunderstood. By "bad vaccination," we merely meant imperfect protection against small-pox, and not harm done to people by the action of the lymph inserted into them. This being understood, I may state in broad terms that the general result of the inquiry, so far as regarded bad vaccination, or imperfect protection, was that we found, on examination, of an immense number of children (for between one and another of us nearly half-a-million of children were personally examined to see what the state of vaccination was), that about one in eight was vaccinated up to Mr. Marson's highest standard; that about one in three was what you might call well protected; and that there were absolutely one in four badly protected, that is to say, that their marks were of an imperfect character, or that they had but a single good mark.

5398. Has anything been done to remedy the bad quality of the vaccination?—Yes; we have endeavoured to do the utmost possible for that purpose.

5399. What steps have you taken with that object?—The causes of imperfect vaccination were several. First, many of the practitioners habitually did not attempt to vaccinate up to Mr. Marson's standard, and were not aware, in fact, of the importance of giving the people a sufficient amount of vaccination. Secondly, there was the non-observance of certain rules with regard to the lymph-taking. And then there was further, the utterly unnecessary extent to which stored and preserved lymph was used; that is unnecessary under proper arrangements for the performance of vaccination, but inevitable under the most unsatisfactory arrangements which we then found in operation. The first two of these causes had already been made the subject of regulation before we began our inquiry, and instructions thereupon had been issued to public vaccinators, I think, in 1859, from which time they had a definite standard to work by, and what we had to do, so far as these causes of imperfect vaccination were concerned, was only to see that the instructions were carried out.

5400. Lord *Robert Montagu*.] Do you issue the same instructions now?—They are in force up to the present time, and I believe now that, under these instructions, Mr. Marson's standard of vaccination is very uniformly adopted indeed, and that those regulations are upon the whole very well obeyed. As regards public vaccinators, Mr. Marson's standard is exacted, and we require that it shall be followed.

Friday, 12th May 1871.

MEMBERS PRESENT :

Dr. Brewer.
Mr. Jacob Bright.
Mr. Alderman Carter.
Sir Smith Child.
Mr. Stephen Cave.
Mr. William Edward Forster.

Mr. Holt.
Lord Robert Montagu.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. W. H. Smith.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. EDWARD CATOR SEATON, M.D., called in and Examined.

5401. *Chairman.*] YOU were stating at the close of the last meeting that, in the inquiry into the state of vaccination in England, it appeared that one of the causes of the imperfect quality of vaccination had been the bad arrangements for public vaccination; in what way had those arrangements acted injuriously?—By the large amount of vaccination with dry lymph and preserved lymph, which was inevitable under them, instead of the vaccination being performed directly from arm to arm, under proper conditions of selection, which, as all authorities on the subject recognise, is the best and most efficient means of vaccinating.

5402. Of course the conditions under which the Act is applied must be different in towns where population is comparatively dense from the conditions in the country; what was the particular effect of that state of things in the towns?—In towns, and especially in large towns, it ought to be the easiest thing possible to secure good arm-to-arm vaccination under conditions which admit of a large selection of the children from whom the lymph is to be taken; but you can only do this by having the number of operators proportionate to the number of children to be operated upon.

5403. Then as the result of the previous practice, what was the special bad effect in towns?—There was generally such a large number of operators in proportion to the number of children to be vaccinated, that the vaccination could not be properly carried on from child to child. In order to perform the vaccination well, and to keep it on continuously from week to week throughout the year, you ought to provide upon each vaccinating day an average of, say, at least 10 vacciferous children; that enables you to pick out the best ones to transfer your lymph to the other subjects requiring vaccination. An average of 10 is, I think, the very least which it is desirable to have, because that implies, of course, that there would be many days on which you have only three, or four, or five such cases attending. In the consultation which we had about the matter with Mr. Marson and Mr. Ceely, our two great authorities on the

subject in this country, before any recommendation or regulation was issued, it was agreed that that was quite the minimum number which ought to be allowed, wherever it could be secured with due consideration to the distance which parents would have to go to get the vaccination. Some of the towns were already very well off in this respect. The public vaccination of Manchester, for instance, has always been excellent, and has always been on that principle; but in most of the towns there was an amount of subdivision, and so large a number of operators, that it was the exception and not the rule for the lymph to be transferred from arm to arm. As an illustration, I will mention such a town as Coventry, for instance. The city of Coventry, which has upwards of 40,000 inhabitants, used to be divided into three vaccination districts; but, as the cases for public vaccination annually were not sufficiently numerous to enable three operators to go on from arm to arm weekly throughout the year, the working of this arrangement was that a great deal of dry-lymph vaccination was done there, and that the operators, not caring generally to go on much with dry-lymph vaccination, used frequently to suspend their operations altogether, so that I have known as much as five months elapse without a single public vaccination being performed in Coventry. We did away with that arrangement and substituted for it, some years ago, a station in the centre of Coventry, and from that day to this, vaccination has gone on weekly from child to child, and under the best possible conditions for getting the thing well done.

5404. When did you make the first arrangements for securing this vaccination from child to child?—In some instances the fresh arrangements were made by the goodwill of the guardians, without any alteration of the law at all; that Coventry arrangement was made, for instance, many years since, in that way.

5405. Do you mean an alteration in the administration of the law, or an alteration in the Act of Parliament?—I speak of an alteration in the Act of Parliament, for the Act of 1867 gave the Privy Council power to make regulations,

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and it is under those regulations that that is being done extensively throughout the kingdom which years ago was done at Coventry.

5406. So much for the towns; now as regards the country, what was the effect of the state of things to which you have referred?—As regards rural districts, there was little or nothing to alter in the matter of division, because distance is such a paramount consideration in rural districts. We accepted the division of the rural districts as they are, and we have not diminished the number of vaccinators there at all that I know of. In some instances we have found a needless multiplication of stations, but the mischief in these districts was chiefly in the system of attendances. The attendances were directed to be given in one of two ways; either there was a number of stations, each of which was to be attended weekly, when sometimes the number of children who would come to a particular station in a year might not be above 20, which you will see at once was an arrangement which must fall through, or otherwise attendance was directed to be given once a month, which, as you will see, is an arrangement quite incompatible with keeping up arm-to-arm vaccination. For these arrangements, we are substituting attendances for some consecutive weeks at certain periods of the year.

5407. Seeing the evil which you believe arose from the previous system, and the steps which you took to remedy it, I wish you to state your opinion with regard to two or three objections which are made (and, at first sight, not unreasonably made) to this change; is it not the case that by having those fewer vaccinators there would be several cases in which the parents had much further to go to take their children?—That almost certainly must be so, but you will remember that it is only in towns that there has been diminution of vaccinators.

5408. What is your present rule with regard to a dense population like London?—The rule which we have laid down for ourselves, and endeavour to follow out, so far as circumstances allow, with regard to London, is, that which you will find stated in the report which was made at the time of the epidemic of 1863, when we proposed that there should be stations which in the denser parts of London should be within half a mile of most, if not all, the inhabitants, and which, as we got nearer to the outskirts of London, might be at a somewhat greater distance. I have before me two maps which we had drawn at that time, one showing the stations as they were, and one showing the stations as we thought they had better be.

5409. Have your wishes been fulfilled in regard to that alteration?—They are in process of being carried out; but London has been later in making its arrangements than most of the country towns, partly, as I said on my previous examination in speaking of another branch of the subject, because of the alteration which the unions have been undergoing by being consolidated and altered in their boundaries. But a very great deal of London is now very much upon the principle which we proposed.

5410. I see it stated in a medical newspaper of great authority, and I suppose of deserved authority, "The Lancet," that notwithstanding this recommendation in your report, there are some parts of London with a comparatively dense population where, instead of half a mile, I think

it is stated, that in some cases, parents have to go three miles; in St. Pancras, for instance; is it within your knowledge that that is the case?—The arrangements for St. Pancras have never yet been submitted to us, nor approved by us. The present position of things with regard to St. Pancras is this, that about 12 months ago the working of the then arrangements of St. Pancras not being satisfactory, the guardians were moved to alter those arrangements. For one reason or another, and chiefly because they were making, I believe, arrangements relating to their medical districts, they asked from time to time to be allowed to put off this alteration, and they were allowed from time to time to put it off until some few weeks ago they of their own accord took steps to carry it out. At their request I then had an interview with their committee, and it was arranged that there should be a certain number of stations for the parish; but the stations themselves have not yet been submitted to us, and I believe that the stations which are now in use are temporary stations. At all events, whatever the arrangement is, it is of the guardians' adoption, and we have no responsibility for it at this moment. Let me say, however, that I have looked upon the map to see where the stations are, and I cannot make it out in the least that there can be any one of those stations which is three miles, or two miles, from any other station; and that I am very certain that the position of the present stations is to the full as convenient as that of the stations they have superseded.

5411. Looking at the position of the actual stations, and not of the stations as you wish them to be placed, you do not find that any parents would have such a distance to go?—No; I am quite sure that there is a mistake there.

5412. You stated that by the Act of 1867 the Privy Council are empowered to issue regulations; will you describe the way in which the law provides that those regulations should be obeyed?—I suppose that the regulations made under an Act of Parliament are part and parcel of the Act of Parliament.

5413. But the mode of operation is this, is it not, that the Privy Council, acting upon the advice of the Medical Department and upon their own discretion, issue certain regulations?—Yes.

5414. To whom do those regulations go?—To the boards of guardians of the respective unions.

5415. I am not now speaking of any particular case, but supposing that the board of guardians decline to put those regulations into force, what is the next step?—Practically, I suppose that the next step would be to argue the question a little with the guardians, and bring them to what we would call reason in the matter; but I presume that, if one were driven to it, the only way of carrying out the regulations would be by mandamus.

5416. Mandamus issued through what department?—I do not know that any question has arisen of having to enforce those regulations by mandamus in any single instance, and therefore I am not able exactly to state.

5417. Is not the operation this: that the instructions reach the guardians, and that if they object to carrying out those instructions the officers of the Medical Department of the Privy Council communicate with them, and try to convince

vince them that the regulation should be carried out?—That is practically what is done.

5418. I gather from your answer that there has been no case in which the guardians have positively declined to carry out those instructions; is that so?—I am not quite sure about that. With regard to a single case, that of Spalding, in Lincolnshire, I am not sure how that stands now. There was some question with regard to Spalding, I think, but the point, being a legal point, does not come within my particular sphere of duty in the office. Mr. Rotton would give you information immediately about that, if you wanted it; but that is the only case, so far as I have ever heard, in which there has been any difficulty, and I am not certain how that stands.

5419. The difficulties, in so far as you meet them, in fulfilling your duty by ascertaining whether vaccination is carried out or not, would, I suppose, be much more in the local authorities omitting to carry it out, than in their refusing to carry it out?—Certainly.

5420. Are you often met with that difficulty?—I do not think so. When we go to a place and find that the thing is not being done, and call the attention of the authorities to it, and point out the specific regulation, and say this, that, or the other thing must be done, I do not remember that we are met with opposition.

5421. Taking the whole of the kingdom, would you say that the guardians have shown willingness to co-operate in the working of the Act?—Certainly, on the whole. When we propose alterations of arrangement, there are often a great number of objections raised in the first instance. Many of the things have only been done after correspondence and after interviews, and the thing often needs to be explained. We endeavour to do that, and, as I say, with the single exception to which I have referred (and I am not sure that that is an exception), I do not know of any one case where the correspondence has not ended in the thing being done. I speak, however, under reasonable reserve. I should need to refer to documents before pledging myself to that statement.

5422. Might not the objection be taken to this change of system which has secured more child-to-child vaccination, but with the accompaniment of fewer stations and fewer public vaccinators, that the parent would have less choice of an operator?—In this, as in all other things, you cannot have all the advantages one way. We had, at the time when the Vaccination Act of 1867 was passed, to consider very much whether it was desirable that vaccinators should be restricted to their districts or not, and, on the whole, balancing the advantages and disadvantages, it was considered, on the knowledge which had been acquired, that it was better that they should be restricted to their districts. The effect of competition, such as it had been, had not been altogether what one would have desired. There is such a thing as competition downwards, as well as competition upwards; and a good deal of vaccination in parts of England, and especially in the parts round about Birmingham and what is called the Black Country, had exhibited vaccination of that kind, that is to say, that a public vaccinator would persuade, or, as it were, bribe people to come to his station rather than to go to another station, by offering, instead of doing as

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the regulations required, viz., vaccinating in the prescribed way, and producing the necessary amount of local effect, to vaccinate them only a very little. He would say, "Mr. So-and-So will vaccinate you in four places; I will do it only in two." It was really a very serious difficulty.

5423. Will there not be this result from the fewer stations, that the vaccinator will have less knowledge of the child from whom he takes the lymph?—I do not think that that objection would be of considerable weight. It is only in rural districts that one can have much knowledge of the people, and rural districts we do not interfere with at all. In towns it is idle to talk of the knowledge as to individuals, because you can have very little knowledge as to individuals.

5424. Comparing public vaccination with vaccination in private practice, is it not generally the case that among the richer classes the vaccine lymph is brought upon a quill by the operator, and that the child is not brought with it?—Yes, that is often so, and the result of that is this: I have a great deal of knowledge of the vaccination of what you would call the upper classes in England, and I can say, without hesitation, that they are not nearly as well protected against small-pox as the lower classes, and they are not so well marked by vaccination on the whole. Of course (and this, under the circumstances, is fortunate for them) they are not so much exposed to small-pox infection.

5425. It happens that I have myself been vaccinated twice since I arrived at mature age; I was vaccinated once by private vaccination, and lately by a public vaccinator: in the case of the private vaccination, the lymph was brought on a quill, and I had no means of knowing at what time, or under what circumstances, it had been taken from the child; in the case of the vaccination by the public vaccinator, I saw the child, and saw the lymph squeezed out of its arm; would that be a difference which would generally apply as between public and private vaccination?—Yes, very generally. Most private vaccination is done with conveyed lymph: but the lymph, taken direct from the arm, is generally much more successful, and generally takes much more certainly than lymph which is conveyed. All lymph is got from a child's arm, but where you use it directly, and insert it directly from the arm to the arm, the amount of success is infinitely greater than where you have to keep the lymph even only a very little while before you transfer it.

5426. I understood you to say, that it was very frequently the case that the vacciniferous child was not brought by the private vaccinator to the patient whom he was going to vaccinate?—It is generally so, but still it is often the other way. For instance, when I practised in town and vaccinated, I never vaccinated, of late years especially, in any other way than that: I used to go to a public station and pick out a nice child and take it to the house.

5427. But as it is not uncommon (and indeed you may say it is common) that among the richer classes the vacciniferous child is not taken to the house in those cases, the poorer classes who make use of the public vaccination would have an advantage, would they not?—Certainly, without any doubt.

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5428. Are you of opinion that the change which you have made in the mode of carrying out the Act has answered your expectations, and that it has improved the quality of the vaccination?—Of that I am very certain; to my own knowledge the present position of a great deal of England will contrast in this respect very favourably with what it was when I became acquainted with it 10 or 12 years ago, when I began to examine the state of vaccination in the different districts.

5429. What do you imagine would be the effect upon the present system of vaccination in England of a removal of the obligation to have children vaccinated at an early age?—It would have a very serious effect indeed; because, as I was mentioning in my evidence the other day, the habit of people to procrastinate and put off things is so very great, that without some such obligation you could not sustain anything like an equable attendance at the stations; there would be so great a number of procrastinators, that unless you made the districts even much larger than they are now, you could not be sure of keeping up your station always with the number of cases that it is desirable to have in order that the vaccination should go on properly.

5430. That would be a bad result, independently of and in addition to the bad result of increasing the area upon which small-pox might operate?—Certainly. The great thing, if you would have good vaccination, is for the vaccination to go on *pari passu* with the births, by which it can be done systematically, regularly, and with due care, and not for it to be left to be done in a dreadful rush at a time of panic or alarm, when it is next to impossible to do things with the care and examination with which it is so desirable that they should be done.

5431. Have the leading men of the profession formed any opinion as to whether a child under six months old is more or less liable to small-pox than a person at another time of life?—The liability to small-pox begins from the time a child is born, and until it is protected it is liable to it.

5432. Is there anything in the age which makes the child more or less liable?—At an early age I believe that the liability is very great, and is, indeed, extreme. We know that one-fourth of all the small-pox mortality takes place under the age of one year.

5433. Would that arise from their being more likely to catch the infection, or from their having less power to resist the disease?—I should think that they are not more likely to catch the infection; I should think that they are more likely to catch the infection when they can run about.

5434. Is there anything in the constitution of a young child which makes it medically susceptible of the infection of small-pox?—If you mean peculiarly susceptible, more susceptible than other children, I do not know. I believe that the susceptibility to small-pox, if a person is unprotected by vaccination, is about the same at all early ages.

5435. The age at which a child must be vaccinated is now three months, is it not?—The age is now three months.

5436. In Scotland it is six months, I believe?—In Scotland it is six months, and they are proposing to alter it.

5437. Is it quite clear that three months is not too early an age at which to vaccinate?—I think the best age is about six weeks.

5438. It has been brought out in the evidence of those who are in favour of vaccination, that generally speaking (and speaking so generally that you may take it to be a rule, which is only proved by extraordinary cases of exception) no really dangerous consequence follows from vaccination, but it is acknowledged that some inconvenience follows from it: would not the possibility of that inconvenience resulting in real danger be very much greater in a young child of three or four weeks old than it would be in the case of a child more than three months old?—I do not think so. Of course, if a child is particularly delicate, you would naturally postpone vaccination; but I have now, in my own mind, a large station where, by the peculiarity of the arrangements, the vaccination is in very large part done at the age of six weeks. I refer to one of the large Manchester stations where, to meet the convenience of the people, the registrar of births and deaths attends at the vaccination station, and registers the birth (which must be done, as you are aware, within six weeks) at the same time that the child is vaccinated. It is for the sake of saving the time of the parents that that is done, so that a very large proportion of the children vaccinated at that large station are vaccinated at between five and six weeks of age. They take admirably, and I am not aware that any untoward results have come from the early vaccination. My own children were all vaccinated when they were from four to six weeks old.

5439. Then you think that if persons had the notion that a very young baby was too weak to bear vaccination, that would be generally speaking a mistake?—Quite so. I take an average baby. When you find a child to be feeble, of course you ought to postpone vaccination.

5440. But the notion that, generally speaking, a child very soon after its birth would be too weak for vaccination, you would consider had no foundation?—Yes; the National Vaccine Establishment have always recommended, from 1808 downwards, that vaccination should be performed at the age of six weeks.

5441. And you would expect that any inconvenience which arose would be just as likely to occur at an average age of four months, as at an average age of six weeks?—Quite as much; and the nearer we get to the time of teething, the nearer we get to the time of complications.

5442. What is the average time at which teething begins?—At about five, or six months.

5443. Does a child at the breast suffer more or less from vaccination than a child after it is weaned?—You should always get them vaccinated when they are at the breast, because then they do not rub their vesicles and interfere with them as they do when they are older. It is a great mistake, in that point of view, to leave them unvaccinated until they get older, because then they interfere with the vesicles so very much.

5444. It has been stated that in Scotland no one can be fined for neglecting to have his children vaccinated, but that he must have refused to have them vaccinated; is that the case?—No. I think that is a mis-interpretation of the Scotch Act altogether. You will see, under Section 17, that

that any parent who does not have his child vaccinated is liable, not only to a pecuniary penalty, but failing payment of that to a specified penalty of imprisonment.

5445. Is it or is it not the case that the system in Scotland is more domiciliary than it is in England?—There is a little misapprehension upon that point. The Scotch Act, which has worked admirably, is on the whole, in my judgment, if I may say so, rather a hard Act. It does not provide any gratuitous vaccination for the people at all. Those who are not actually paupers must pay to be vaccinated. Therefore, unless they are prepared to pay a good fee, the doctors do not go to them, and we find, in the notes of the registrars, continual allusions to the difficulties under which the people are placed from that circumstance. I have here the last Report of the Registrar General for Scotland about it, and in his appendix there are certain extracts from the notes made by the registrars of the respective districts; one says that at Lairg, in Sutherlandshire, “there is a general desire on the part of parents to comply with the provisions of the Act. This is a matter of difficulty to those residing in remote parts of the parish who have to come perhaps 15 or 20 miles to meet the vaccinator.” Then at Gairloch “parents complain of the high charges made, particularly those who come a distance of 10 or 15 miles to meet the vaccinator;” and so on.

5446. In a town like Glasgow would the people be differently circumstanced from what they would be in Liverpool?—They would be at a serious disadvantage, but for the benevolence of public institutions; but in Glasgow the institutions step in and do what the public system in England does. The Royal Infirmary in Glasgow and the Faculty of Physicians and Surgeons in Glasgow have very fine stations indeed. I think that the Royal Infirmary in Glasgow has a larger station than you will find almost anywhere in England. In Edinburgh also there are the New Town Dispensary and the Old Town Dispensary, which are large vaccination stations.

5447. Do the returns furnished by the Scotch Registrar General show the number of cases of fines for neglecting vaccination?—The returns of the Registrar General do not show that, but you will get that in the annual reports of the Board of Supervision. You will find in those annual reports all the fines exacted under Clause 18 of the Scotch Act; but of the fines, if any, exacted under Clause 17, I am not aware that there are any returns at all.

5448. The Report of the Registrar General for Scotland gives all the children who were vaccinated in the year 1869, does it not?—Yes; it gives a complete account for the year 1869, but I do not remember that it goes into the question of fines.

5449. Of course your practical knowledge of vaccination must be very great, independently of what you may learn by inspecting what other persons do?—Yes.

5450. You have yourself vaccinated very largely, I presume?—I have vaccinated tolerably largely for that matter; but my chief special experience is in the knowledge which I have of the way in which the large vaccinators throughout England do their work. In all the large towns

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of England, as well as in London, I know the working of the whole of the stations.

5451. As it has been your duty to see that this compulsory Act is carried out, you would of course have brought before you many cases in which evil consequences are said to have been the result of vaccination?—I should have been sure to have heard of them if there had been such ill consequences.

5452. To what extent have you found that there have been ill consequences?—Barring the rare possibility of erysipelas supervening after a child has been vaccinated, and barring the possibility, which I must speak of as the merest possibility, of any infection other than the vaccine being communicated, if the vaccination have been done otherwise than with pure vaccine lymph, I am not aware of any risks or dangers at all.

5453. Supposing that the vaccination has been carefully conducted, are you aware of any case in which vaccination pure and simple has caused any serious disease?—Certainly not. The allegations which people make of diseases supervening on vaccination are generally the mistaking of mere sequence for consequence. It would be well to note that nothing is more common than this, of which I could name cases by the score. A child, say, three months old, or thereabouts, is taken to be vaccinated; for some reason or other it is not vaccinated; perhaps because the parent was late in coming, and the vaccinifer had left, or something of that kind; it is directed to be brought at another time, and in the interval and before the child has got vaccinated it comes out with a full eruption. Now, if that child had been vaccinated at the time it was first brought we may be quite sure that the vaccination would have been credited with that eruption. Three instances came to my knowledge recently in one week of children whose vaccination had thus from mere accident been put off, and before the vaccination could be done, out came an eruption which would most certainly have been ascribed to the vaccination if only it had been performed at the time when they first applied. That illustrates how much it is a matter of coincidence. Then there is always the possibility, which has been referred to by other medical witnesses, that vaccination in a child about to evolve some affection from its own blood, may hasten the evolution of that affection.

5454. When you say that it may hasten it, may it not bring out what would never have come out otherwise?—No.

5455. Do you mean that it only brings out a disease which would have shown itself under any circumstances?—Quite so.

5456. You admit it to be possible that a careless vaccination may cause infection; have you had frequent cases of that?—I have had none. With reserve as to what I might have to say respecting erysipelas or syphilis, I do not know of any disease which can be referred to at all in connection with vaccination.

5457. Do you know of any other infectious disease as to which there is a supposition that it has been given by vaccination?—Not a reasonable supposition. I do not mean what parents may have said.

5458. With regard to syphilis; you heard the evidence which has been given by Dr. Hutchinson

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Mr. Seaton, as to a case which has occurred, did you not?—I did.

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5459. That comes upon you with great surprise?—It comes upon me as a new case altogether.

5460. Do you consider that case entirely proved?—We have not the ultimate proof; that is to say, the symptoms of constitutional infection have not manifested themselves yet. If you ask me my opinion about it, I quite expect that the symptoms will manifest themselves; but it has been objected to the case that the conclusions drawn have been premature.

5461. Were you at the last meeting of the Medical Chirurgical Society?—Unfortunately I was not. I was very sorry not to be there.

5462. I see that it is stated in "The Lancet" that "in none of the cases has any characteristic secondary eruption appeared, although it is only right to add that Mr. Hutchinson thought that the roseola which appeared in some of the cases was of a specific character." Supposing that no secondary symptoms do appear, there would still be doubt left upon the case, would there not?—Yes, certainly.

5463. Your opinion being very much interested in the matter is, that it is a case of very strong suspicion, and to your mind of proof, but that it is not absolutely proved yet?—It is not absolutely proved yet; but still I quite expect that we shall have the further proof.

5464. Supposing that this case is proved, to what do you think that the transmission of the infection is owing?—I presume that the most reasonable interpretation is that there was blood inoculation, which we know will produce syphilis.

5465. Your opinion is not in the slightest degree altered, that it was not inoculation from the lymph which produced the syphilitic infection?—I do not believe that it was inoculation from the lymph.

5466. By what means would you try to guard against the possibility of such a case again occurring through the mode in which the vaccination was performed?—Of course the precautions are of two kinds particularly; the one is to avoid syphilitic vaccinifers, and the other is to use the utmost care, so that you have an absolute certainty that you do not draw blood in taking the lymph.

5467. Does the Medical Department intend to take any steps to obtain either or both of those results?—Of course it does; it will issue more stringent and particular instructions to the public vaccinators throughout the kingdom, and it will call their attention to these cases.

5468. With regard to the necessity of their watching those two points, the condition of the vaccinifer, and the mode in which the operation is performed?—Certainly.

5469. Is it not apparent by the evidence that it will be easier for them to do the second than the first?—We must, as far as possible, have both done.

5470. What is your opinion with regard to vaccination from the cow, as compared with vaccination from a child?—Vaccination from the heifer when it takes is, I apprehend, quite as protective as vaccination from a child.

5471. Does this case make you think it more desirable to encourage vaccination from the cow?—The great difficulty which we have about it is

that in the vaccination from the heifer so very much failure takes place, and that there is often very great difficulty in getting the vaccination to take properly. I do not think that it is anything else than risks of carelessness that we have to guard against; and vaccination from the heifer is not necessarily exempt from risks of carelessness. I do not know whether the Committee are aware that at the Hôpital St. Antoine in Paris, in vaccinating from a heifer, syphilis was actually communicated.

5472. How did that happen?—The way in which it happened was this: they were vaccinating a series of persons, and when they arrived at one person in the series, they got some blood on the lancet from that person; and then the lancet, being unwiped, transferred blood to the next person; that is a risk of carelessness. I shall be very desirous of getting further information from Holland, where they have been carrying on the system of heifer vaccination for some very considerable time. I got a great deal of information about it two years ago, and I shall now be very anxious to get information of their further experience.

5473. It is the fact, is it not, that an epidemic of small-pox has been raging with fearful virulence in Holland?—Yes; and, to account for its great fatality as compared with our own epidemic, I think it has been mentioned here, but I will refer to it again, because I can state it of my personal knowledge, that the habit in Holland is to leave the vaccination until the children are above two years of age. Three-fourths of the public vaccination in Rotterdam, for example, is done between the ages of two and ten years, and by this delay you have of course an immense young population there ready to take small-pox and to extend it.

5474. Then, comparing vaccination from the heifer with vaccination from the child, are you of opinion that the vaccination from the heifer is not at all so sure of success as the vaccination from the child?—I should have my own children vaccinated from a child, most certainly.

5475. And therefore you would think that this possible and almost infinitesimal danger of syphilis was much more than counterbalanced by the very much greater danger from small-pox by a change of the system?—That is my opinion.

5476. I do not in the slightest degree wish to underrate the importance of this case, supposing it to be proved to be true, or to underrate the necessity of the profession and of the Government doing their utmost to guard against its recurrence; but is it not the case that it is exceptional almost to the degree that it cannot be taken into account in legislation?—I quite think so.

5477. Would it not be almost impossible to put into numbers the calculation of the chance of catching syphilis, which might be founded on these infinitesimally exceptional cases?—I think so.

5478. That is to say, that out of the many thousands, or hundreds of thousands, of cases which must have come under the observation of the profession for many years past, this appears to be almost the only case which seems to the profession to admit of proof; is that so?—Yes, I think that is quite so, and even that with the reservation to which you yourself called attention

tion just now. I know that all do not accept these cases, but I myself accept the cases; that is to say, it is my inner conviction that they are true.

5479. Do you accept the other case, which was brought forward by Mr. Hutchinson?—Not at present.

5480. Mr. Simon, when he was examined, stated, in answer to a question, that no such an occurrence as the communication of syphilis by vaccination as is reported to have happened in the Rivolta case and in Paris, has to the best of his belief ever appeared in England. Mr. Simon, at the time he gave that answer, was not aware of this case, was he?—No; it occurred afterwards.

5481. It was stated by Mr. Hutchinson that that case was brought before him by you; was that so?—Quite so. It came to me, I may say, not in my public capacity, but entirely as a private case. The gentleman who performed the vaccination, quite a stranger to me, came to me, believing, I think, that I knew something of matters connected with vaccination, he being in great trouble and distress about it.

5482. And you brought it before Mr. Hutchinson, thinking that it was your duty, as having to do with, and as being employed to carry out, the Vaccination Act, to examine into any case which might fairly be brought forward against the Act?—Partly so. It came in the way of conversation with the gentleman as to what the best course was for us to follow, and I recommended him by all means to have some high medical authority with him, and I recommended Mr. Hutchinson, not only as an excellent practitioner in syphilis, but also because I knew that he would thoroughly investigate the whole circumstances. Mr. Hutchinson is a great investigator; he is not merely a practitioner.

5483. I do not know how far, in medical investigations, the same principle applies as in other investigations, that there is always a temptation to an investigator to prove his case?—At all events, I was very anxious that the thing should be thoroughly sifted out. There is nothing so important for us as to know the complete and exact truth.

5484. And you brought it before Mr. Hutchinson, as believing that there was no person more likely to give it intelligent and impartial investigation?—Quite so; that is my opinion.

5485. And I think you went down lately to Middleton to inquire into some cases of alleged syphilis in consequence of vaccination?—Yes.

5486. Did you come away with the conclusion that in no one of those cases it was proved?—I did; it was all moonshine; neither the vaccinator, nor any one of the children, had any syphilis. The children had died of various diseases at long periods after vaccination. One of them died of measles 20 months after its vaccination; another died of convulsions a year and more after its vaccination; another died of consumption, which it inherited from its mother, who has since died of consumption; another died of typhoid fever, which it had caught from its own mother at the time that its mother was nursing it. That was the substance of those Middleton cases.

5487. I will now come to suggestions for the amendment of the law. I see that it was stated by one of the witnesses (Mr. Fry, I think), that it would be very desirable to have the registra-

tion of births more exact than it is at present; have you any opinion with regard to that?—Yes, I have a very strong opinion with regard to that.

5488. In what way do you find the present registration is deficient?—A number of births, no doubt, escape registration. Registration is voluntary, and unless you have an active registrar, he lets a number of cases escape.

5489. How does that precisely tell upon the operation of the Vaccination Act?—By diminishing our means of tracing unvaccinated children. Under ordinary circumstances we have no means of tracing children except through the birth register.

5490. Would it not be the case that those children who would not be registered are the children of parents who would be most likely, generally speaking from apathy or from carelessness, to neglect having their children vaccinated?—Yes, I suppose so. It is the careless class particularly who do not get registered, and who do not get vaccinated.

5491. Is it not the case, that it is the careless and the very poor?—Yes, no doubt.

5492. Have you any practical detailed suggestions to make with regard to the improvement of the law as to registration?—I have not. The alteration of the law of registration is a thing which one may recommend in connection with the Vaccination Act; but, of course, one would require a separate Act to do it, and I have not come prepared with any suggestion as to the way of doing it. I should simply require that, as in Scotland, every birth should be registered, under penalty. In Scotland they have, I believe, a very complete registration of births.

5493. It is compulsory in Scotland, is it not?—It is compulsory in Scotland.

5494. Are you able to compare the effect of that system in Scotland as bearing upon vaccination, with the want of it in England?—No; because I am obliged in either case to take the birth registers as they stand. I may know, from independent testimony, that the birth registers in England are not nearly so complete as the birth registers in Scotland, and that therefore we have not so complete a means of tracing cases for vaccination, but further than that I cannot say.

5495. In one of your answers at your last examination, you stated, did you not, that Section 28 of the late Act enabled the guardians to appoint an officer to find out that the Act is complied with, and that you believed that the guardians of most of the unions in the country had appointed such an officer?—Yes; the majority of unions inspected last year certainly had, and so have those which have been inspected this year, up to the present time.

5496. Have you the exact number of those who have such an officer and those who have not?—For the last year I think I gave them in my former examination.

5497. You said: "I may mention that out of 260 unions, all of them but six extra-metropolitan, inspected last year, I find by the returns that only 120 were reported as not having vaccination officers at the time the inspector went to them; a large number of these have got their officers since, but others have not;" would it be easy for you to furnish an immediate return of how many had, and how many had not, such officers?—I will inquire: I should think

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think that there could not be any difficulty about it. We did not make detailed inquiries about it till the beginning of 1870; but from that time I think you could have a nominal return of the unions within a few days. (*The Return was furnished, vide Appendix.*)

5498. Including the metropolis as well as the unions outside the metropolis?—Yes; the Poor Law Board, I know, have a note with regard to the metropolitan unions; except half a dozen of them, they are not included in the numbers which I have given.

5499. Are there still several unions in which such officers are not appointed?—There are a great many.

5500. Would you think it advisable to make it obligatory upon the unions to appoint such officers?—I think not only that it would be advisable to make it obligatory upon the unions to appoint such officers, but I think the officers ought to have their duties distinctly laid down for them by the central authority. I think further that each such officer ought to perform the whole duties connected with the looking after vaccination in his union or district, in the way which was suggested by Mr. Fry on his examination, namely, that he should be supplied by the registrars of births and deaths with copies of their birth registers, and that he then should be bound to look after the cases, and keep the vaccination registers. Of course, in many unions, and especially in rural unions, the registrars of births and deaths would themselves be the best persons to have as vaccination officers.

5501. There is an advantage in that, I suppose?—A great advantage in rural districts; but in towns generally it is not so.

5502. In towns it is undesirable that it should be so, I presume?—Yes; as a rule, it would not work in towns at all; but in rural unions nothing can be better, generally speaking.

5503. It would not work in towns, I suppose, because each office would take up so much time, that you could not have both offices performed by the same man?—Quite so; and the class of persons who are registrars in London and large towns are often tradespeople, professional men, and others who would scarcely undertake the duties of visitation and personal inquiry requisite in a vaccination officer.

5504. Then would you make these two practical suggestions; in the first place, that it should be obligatory upon every union to appoint a vaccination officer; and secondly, that the vaccination officer should have the register of births handed over to him, and should keep the register of vaccination?—Quite so.

5505. Have you any other suggestion to make?—I should like there to be a simplification of the machinery altogether. That would be a local simplification, but I should like a central simplification. The present is an inconvenient mode of proceeding, to say the least of it.

5506. The present system is this, is it not, that the Privy Council, whom it is your duty to advise, give advice to the Poor Law Board which the Poor Law Board gets the guardians to carry out; and if the guardians refuse to carry it out, the Home Office then has to be made use of to compel them to do so?—I do not know that we have to go to the Home Office at all.

5507. A mandamus would not come from the Poor Law Board; is it not the case that many prosecutions have been instituted against persons

refusing to have their children vaccinated?—Yes.

5508. That is done by the Home Office, is it not?—By the local authorities. But I remember now that, not only in case of mandamus, but also when any disputed questions of law arise either requiring the advice of the law officers of the Crown, or having perhaps to go before a superior court, we have to refer to the Home Office.

5509. Is it your impression that the present system by which one office gets the information and advises two other offices as to what ought to be done, would be better supplied by one office being responsible both for obtaining the information and for getting the law carried out?—Unquestionably.

5510. What do you think would be the effect now, of abolishing compulsory vaccination?—Simply an awful increase in the mortality from small-pox, and a considerable increase therefore in the amount of mortality in the kingdom.

5511. Do you not suppose that the immense advantages of vaccination have now so come home to parents, that they would be likely to get their children vaccinated without any compulsory law?—The great majority of them would have their children vaccinated, no doubt; but even a large proportion of these would do exactly what was done before we had any compulsory law at all; they would constantly put it off, and they would say, "Oh, it is time enough yet; stop till the small-pox comes;" and then you would have the vaccination done in the scramble-scramble way in which we know it is done when it is left to such times.

5512. You would have three classes that would have escaped the operation of the Act; you would have, in the first place, would you not, the perfectly careless and apathetic parents, of whom, unfortunately, there are many, who take no care of their children?—Yes.

5513. And, secondly, you would have those who perhaps wished to do their duty, but who would put it off, thinking that there was time enough to do it hereafter?—Yes.

5514. And, thirdly, you would have those who had a strong opinion (and perhaps, to their own mind, a conscientious opinion) that they ought not to have their children vaccinated?—Yes.

5515. Do you not consider that the first two classes are far greater in numbers than the third?—Certainly. The number of the third class is relatively very small; exceedingly small.

5516. Consequently, do you not think that any attempt to meet the case of the third class, who have the conscientious opinions, which attempt at the same time released the other two classes, might cause a very considerable increase of small-pox?—I might go further than that, and say that it would most certainly cause a very considerable increase of small-pox.

5517. Mr. Muntz.] You stated that in some instances erysipelas has followed vaccination; in such cases, would it not follow in just the same way from merely the prick of a pin without the transmission of lymph?—Quite so. In one of the cases that I know of, the thing followed at once; that is to say, there had been no taking of the vaccination at all. Indeed, I think that in a case brought before the Committee there was no taking of the vaccination.

5518. Then it was not the vaccination, but the incision?—Quite so.

5519. Many

5519. Many silly people, as we see, have their ears bored to put ear-rings in; might not erysipelas arise from that just the same as from vaccination?—Quite so.

5520. Mr. *W. H. Smith.*] Have the Privy Council taken any steps to satisfy themselves that the regulations which they have issued have been carried out in the metropolis?—Yes; they are satisfying themselves with regard to that, I believe. It is my business to go and see that the things are done.

5521. I hold in my hand an extraet from the report of the medical officer of health for the Strand district of last year: he states, that for 10 years, from 1856 to 1867, the average of births was 1,287; the average number of successful vaccinations being 962: after this Act was brought into operation in 1868, those successful vaccinations fell to 685; in 1869 they fell to 445; and in 1870, the births being 1,105, the successful vaccinations reported amounted to 253: with those facts before you, did you take any steps to remedy the evil which existed?—We did. But anterior to 1870, we had had a great deal of trouble both with the Strand Union and with the St. James's Union, for the district of the Strand Board of Works, to which your Report refers, has bits out of each of those two unions. In the Strand Union, for some little time after the present Vaccination Act came into operation, when Mr. Kelner was clerk, the vaccination was exceedingly well looked after, and the first year's working of the Vaccination Act in that Union was almost as good as could be; but when he died, the whole thing was allowed to go, I know not how. We have been in constant communication and remonstrance since with the Strand board, and I believe, though I am not able to tell you of my own knowledge, that at last they have appointed a proper person to see after it. The St. James's, Westminster, Union, was expecting to be amalgamated with St. Giles's, and I believe it was on that ground that they kept constantly putting off the appointment of an officer to look after the vaccination of the children almost, if not quite, until the epidemic came.

5522. But how is it that you account for the fact that, there being no officer to look after vaccination prior to 1868, the vaccinations were before that date so numerous in proportion to the births, whereas the same state of things existing now, excepting that you have a new system of vaccination, the vaccinations have fallen to 253, or to one-fourth of the former number?—I think that there is some little fallacy with regard to those figures. I did not know that I was going to be questioned about it, or I would have been prepared, and I should be very happy to put the exact state of things before the Committee. But, if I am not mistaken, the high numbers which are given for the earlier period take in some years when small-pox was very prevalent, and so include a large amount of re-vaccination, as well as many back vaccinations, by which I mean vaccinations that had been postponed till over one year of age, while in the last two years there has been nothing of that kind. So that, although there be that large difference between the earlier years and the later ones, as regards the absolute numbers vaccinated, there may not be anything like that difference in the number of babies vaccinated in the respective years.

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5523. Can you hand in a Paper upon that subject at some future time?—Yes, I will do so; you shall have the whole facts. (*Paper was furnished, vide Appendix.*)

5524. At all events, if there is a falling-off in the number of vaccinations, it would be a strong argument, would it not, in favour of the appointment of officers to look after those who have neglected to vaccinate their children?—Yes, that is what we have always contended for as a necessary and indispensable thing.

5525. Have you communicated with the Poor Law Board urging upon the Poor Law Board the appointment of vaccination officers in the districts of London?—Yes; at the end of 1867, in anticipation of the Act coming into operation on the 1st of January 1868, a letter was written from the Privy Council to the Poor Law Board, in which it was said, "It appears to my Lords that in any district it will be difficult, and in any populous district impossible, for guardians to give full effect to the intention of the Legislature unless they employ a paid officer or officers to make the requisite inquiries and to take such further proceedings as the statute requires."

5526. But in particular cases, have you urged the Poor Law Board to appoint such officers?—No doubt.

5527. Is it a fact that they have objected to the appointment of such officers?—At first I believe they had a notion that temporary appointments would do, and that they had better wait and see whether those officers were required.

5528. Has not the result of the elating or division of responsibility, with regard to the appointments contemplated by this Act, been that the distinct directions of the Legislature have not been carried out?—I could hardly call them distinct directions of the Legislature, because the Legislature did not say, "You shall appoint an officer," but said, "You may"; therefore I can hardly go that length.

5529. *Chairman.*] It would not be in the power of the Poor Law Board to make the guardians appoint an officer, would it?—No.

5530. Mr. *W. H. Smith.*] The 27th section of the Act says that the guardians shall inquire into the circumstances of the cases contained in the list; does it not?—Yes.

5531. Therefore it is imperative on them to make that inquiry; is it not?—Yes.

5532. The 28th section says that they may incur all reasonable expenses for the purpose. Now the guardians can only inquire through the medium of such an officer, and therefore they must appoint an officer; must they not?—Quite so.

5533. Then the guardians have been willing in certain cases to carry out what they hold to be their duty, and the Poor Law Board has objected; is not that so?—I cannot deny that.

5534. Is it within your knowledge that they have done so?—In some instances.

5535. You have always been pulled up, in point of fact, have you not, by your want of power to enforce the Act for which you were in a great measure responsible?—Yes; and we have felt that very seriously.

5536. Have you any knowledge with regard to the proportion of the population in London as to which the inspectors of vaccination have been at work for a period exceeding six months?—No, I could not give that off-hand. I should

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need to look back about that to see. I know that there were a good many unions where there was no officer properly at work until an advanced period of last year.

5537. What is your opinion as to the period of time within which the registrar should give his list to the board of guardians, he being required by the 27th section to do so at the end of six months?—That is much too long.

5538. What date would you fix?—I should be inclined in the first place to make all boards of guardians have a vaccination officer, and then to make this officer keep his register close up, but I would make him, of course, report to the board what he does, say quarterly.

5539. That is to say that you would require him almost every week to make copies of the register, which should be in the hands of the vaccination officer, and that he should proceed at once to call upon the parents to vaccinate their children, but that before taking any legal proceedings he should take the authority of the board of guardians or of some other officer?—Exactly; I think, however, that he might have certain duties laid down for him even as regards legal proceedings, which might enable him to act without referring to his board in every individual case; but of course he must be in communication with his board, and report to it at definite times all that is done. Subject to this, I would have him as the executive officer for doing the whole work.

5540. You spoke of the arrangements of St. Pancras not having been submitted to or approved of by you. This is the year 1871, and the Act came into operation in 1868, so that three years and a half have elapsed since the Act came into operation; that is so, is it not?—What happened was this: In the year 1868 certain alterations were made by the guardians of St. Pancras, which were submitted to the Poor Law Board, and not being in contravention of any of our regulations, they were not referred by that Board to the Privy Council. They were approved by the Poor Law Board, but we knew nothing about them. Some little time after that, when, in the course of my ordinary duties of inspection, I found out what the arrangements were, I saw they were of a character which, in my opinion, was not likely to work well; but as they were arrangements which had only lately been made, and as they had been sanctioned by a Government department, I did not feel that on my own opinion as to whether they might or might not work well, I should be justified in taking any step without actual experience of what their practical working really was. I therefore allowed them to go on for some time, until they had had in fact two years' working, which I considered was ample to enable one to judge whether they were likely to work well or ill, and finding then that they had not worked well I, in the middle of last year, proposed that they should be altered. Nothing was done, as I think I said in my answer to the Right Honourable Chairman, until quite recently, in that matter. The guardians desired, from time to time, for one reason or another, that the alteration should be postponed, and we always try to get things done along with the guardians if we can, instead of against them.

5541. *Chairman.*] You stated, did you not, in the beginning of your answer that the alterations made by the guardians were not in contraven-

tion of the instructions of the department?—They were not in contravention of any regulation.

5542. But did they carry out the regulations?—The particular way in which they did not work well was this; our regulations require that the districts should not have less than 25,000 people, and they appointed districts which had not less than 25,000 people; but if I had had any opportunity of pointing out what the working of that would be in St. Pancras, I should have shown them that they would need for that parish districts which would have many more than 25,000 people, because in parts of St. Pancras there is a considerable population of a class which does not go to the public vaccinators at all, but whose vaccination is done by private practitioners; and other parts of the parish have the advantage of the very large National Vaccine station which exists either within, or close upon the boundaries of the parish; so that I was quite sure that there would not be a sufficiency of subjects for public vaccination to maintain the number of stations which the guardians had appointed; they had appointed six stations, and I knew that the cases would not sustain six stations according to our standard of efficiency, and at the end of two years' working so it proved, for only two of the stations were really efficient stations.

5543. *Mr. W. H. Smith.*] If the responsibility had rested wholly with the Poor Law Board, do you consider that, possessing the information which the Poor Law Board does possess, they would have acted in the way in which the board of guardians have acted, or that the Poor Law Board would have been satisfied with the arrangements that had been made?—I presume so.

5544. *Chairman.*] I understand you to say that your information with regard to St. Pancras, and your knowledge of vaccination, induced you to suppose that the instructions which had been issued for the whole kingdom required some modification in relation to St. Pancras?—Yes; I would have the Committee observe that the number of 25,000 persons fixed in our regulation is a minimum number.

5545. Supposing that the Medical Department which is at present at the Privy Council had been transferred to the Poor Law Board, you would then have given the Poor Law Board information with regard to that particular case, would you not?—Of course.

5546. It would have been your business to do so, I presume?—Quite so.

5547. Whereas, as the case stood, it was not your business to give that information?—We did not know anything about it.

5548. It was impossible for you to give that information, was it not, because the regulations issued by the St. Pancras Board were not submitted to you for approval?—Quite so.

5549. *Mr. W. H. Smith.*] The 4th section of the Act under which you work declares that all such regulations, and so on, which the Privy Council are authorised to make, shall be observed by the several persons to whom they apply; am I correctly interpreting your evidence when I say that you have issued regulations, and that you have issued recommendations, but that practically you have stopped there and have not taken any step to enforce this section of the Act, and have not put the pressure which is sometimes required

required to be put upon persons who either neglect or omit to do work which they are not required to perform?—You do not at all correctly interpret what I mean.

5550. Can you give cases in which you have really required persons to act up to the directions which you have issued from time to time?—I could give you innumerable instances. Our inspectors, as they go from union to union, are instructed to report to us what is the state of the arrangements; how far these are in accordance with our regulations and instructions; and if they are not in accordance with those regulations and instructions, and do not provide properly for the public vaccination of the union, what alteration is requisite to make them do so. Upon their reports action is at once taken, either by representing to the Poor Law Board, or by representing to the local authorities, what ought to be done to remedy the defect.

5551. Supposing that these authorities have neglected and omitted to take notice of such representations, what step has been taken in any one case?—In the matter of arrangements I do not remember any case in which what the Privy Council has insisted on has been finally resisted; but in a case like that of Hastings, for instance, where the guardians refused to look after the children who were reported as defaulters under Section 27, application was made to the Court of Queen's Bench for a mandamus; directly, however, the application was made the guardians succumbed, and there was an end of that case. There was a similar case at Liskeard, but I think the knowledge of the Hastings case was enough for them.

5552. *Chairman.*] The way in which you act is that you bring the case before myself, or before the Lord President, and we bring it before the Home Office, and the Home Office take the necessary steps to compel the guardians to do what is requisite; is not that so?—Quite so. Whether as regards that part of the Act, or as regards the arrangements in force for public vaccination, where we know that there is anything wrong, we do not let it go; but no doubt it is a long process sometimes to get it remedied.

5553. With regard to the deficient arrangements by guardians, the plan which you generally adopt is this, is it not; that you bring the case before the chiefs of your own department, and that they communicate with the Poor Law Board?—That is so.

5554. Therefore it is not that the case escapes attention, but that there may be delay in consequence of one office having to act upon another?—Very great delay.

5555. *Mr. W. H. Smith.*] Have you any opinion as to whether the medical officers of health of the country should be entrusted with any duty in connection with vaccination?—When we get a sanitary organisation for the country, vaccination would almost necessarily be a part of it. Vaccination is a part of sanitation, but I am not prepared with any practical suggestion upon the subject just now.

5556. As a matter of fact, the medical officer of health observing a deficiency in vaccination, has no power whatever to require the children to be vaccinated, or to put in force the Vaccination Act; has he?—He has no direct power.

5557. All that he can do is to report to somebody, who draws the attention of somebody

else, who may set in action somebody else; and so by a very circuitous process public opinion is brought to bear either upon the Privy Council or upon the board of guardians, and something may be done; that, I believe, is the present course of procedure?—Yes, the medical officers of health have no direct power of action.

5558. *Mr. Holt*] I believe that you are very generally acquainted with vaccination stations throughout the kingdom?—I am, throughout the towns of the kingdom; lately I have not had much to do with them in the rural districts.

5559. But you have on frequent occasions witnessed the operation of vaccination performed at those public stations, have you not?—Yes.

5560. Have you ever had occasion to complain of inefficiency on the part of the operators when you have witnessed the operation performed?—Sometimes one has had to make a suggestion or so; but the vaccination stations, so far as I know them, are now exceedingly well worked.

5561. Do you think that, generally speaking, skill and care are exercised both as regards the character of the lymph that is taken and as regards the mode of performing the operation?—I am quite satisfied that that is so.

5562. Are you aware whether at those stations any inquiry is made as to the health of the parents of the children from whom the vaccine lymph is taken?—I do not know about that; generally speaking, one judges from the children as they come, and from the look of the children themselves; the health of the parents has not come so much into our calculation as possibly it may come hereafter.

5563. I presume, then, that I am correct in saying that the operator judges entirely from the appearance of the child?—Practically, that is so.

5564. In answer to a question from, I think, the Right Honourable Chairman, I understood you to say that there was no danger arising from vaccination, provided that pure vaccine matter only was taken?—Yes; I do not apprehend that there is any danger if you take pure vaccine lymph.

5565. But, provided there be either blood or any foreign matter with the lymph, you would not say that there was no risk?—No; I could not say there is no risk.

5566. May not blood, or even pus, or other foreign matter be present in sufficient quantities to do harm without being observed by the party operating?—I think not.

5567. Do you think that if he exercises sufficient care there ought to be no danger in that respect?—Such is my belief; but I think also he should exercise care in another direction, and should not use any child as to whom he has the smallest suspicion that it has anything the matter with it.

5568. It has been stated to this Committee that leprosy has been communicated by vaccination; do you consider that impossible?—It is not in the least degree likely. Dr. Gull mentioned, when he was before the Committee, the large inquiry which the College of Physicians had made in that respect, and they did not come to any conclusion whatever of that kind.

5569. Then you think that there would be no risk of conveying any other skin diseases by vaccination?—I have never seen any instances of the thing occurring at all.

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5570. Might it not be possible that some foreign matter might mix with the lymph, and so be communicated to the blood of the child who was vaccinated, and that by that means the skin disease might be conveyed?—We have been vaccinating now for the last 70 years, and I have a very large knowledge of the vaccination of the country, and I cannot but conceive that we must have had evidence of it long before this, if there had been risks of the kind which you mention.

5571. You have no knowledge of it?—I have not.

5572. But you would not say that, on that account, it could not possibly happen?—I would not say of anything that it is impossible; it may be theoretically possible, but I can scarcely conceive it occurring.

5573. Practically, you think it unlikely?—It is so unlikely, that it ought not to influence us at all in our practical proceedings.

5574. May not a child suffering from hereditary disease be in a state to convey that disease without showing any manifest symptoms?—I can only say that I do not know of any instance.

5575. But would you not think that it was important that some inquiry should be instituted into the health of the parents before taking the vaccine lymph from the arm of the child?—I think there is a question arising about that now.

5576. So that without careful inquiry as to the health of the parent, it is scarcely possible to avoid syphilitic vaccinations; is not that so?—I cannot go that length at all; generally speaking, you can tell a syphilitic child very clearly when you see it; the cases are few where you cannot.

5577. But there are cases of exception, are there not?—There are cases, no doubt, where syphilitic children look well-to-do: but if you examine them closely, you will find traces of the disease.

5578. But do you not think, considering the character of vaccination at a large vaccine station, that a child might easily be accepted by the surgeon which was really syphilitic?—It is quite possible that it might.

5579. That is the only way in which I wish to put it; therefore I understand that from your experience you would not take any child at random?—Certainly not.

5580. I suppose that there is no difficulty in selecting a healthy arm at a large vaccine station?—Not if you have children enough. It becomes greatly a question of the number of children you can secure at the station.

5581. May I take it that it is your opinion that in a large vaccine station a careful surgeon would not ordinarily find a difficulty in selecting arms from which to take lymph?—I am quite certain of that.

5582. Do you think that any greater risk attends the operation at those large vaccine stations which the poor have to frequent, than exists in private practice, where the operation is performed by thoroughly competent men?—I do not indeed. My children go for re-vaccination to public stations; my youngest boy, who is at school in the country, went to a public station to be re-vaccinated the other day.

5583. Mr. J. Bright.] I think something was said with regard to "The Lancet" on this discus-

sion before the Medical Chirurgical Society, in reference to the transmission of syphilis; there are a good many medical journals in this country; I have before me "The British Medical Journal," and "The Medical Times and Gazette"; then there is "The Lancet"; which of those has the most authority?—I must answer that question, I think, as Sir William Jenner answered it the other day, by saying that no newspaper can be taken as an authority.

5584. But in the medical profession upon general subjects, which has the most authority?—I really cannot say. They are all accepted papers.

5585. Those two which I have before me "The British Medical Journal" and "The Medical Times and Gazette," may, I presume, be considered some authority; I ask the question because I have sometimes understood that "The Lancet" considered that it was the only authority; have you noticed that both these journals consider that this discussion with regard to the transmission of syphilis by vaccination is a very important one?—Undoubtedly it is a very important one. If you are reading the journals of this week, I have not seen them yet.

5586. I have before me those of April the 29th; I notice that the writers in those journals both consider that an entire change will take place with regard to the views of medical men upon this subject in consequence of those new facts; is that your opinion?—I have not the least doubt that their results will be to make medical men generally infinitely more inquiring than they have been hitherto, when they have considered it almost impossible that such a thing as this could occur.

5587. Seeing that they have considered it almost impossible, and that many hundreds of medical men, as I understand, pronounced it to be impossible, is it not quite possible that in a little while there will be another change, and that instead of looking upon the transmission of syphilis by vaccination only as possible, it may come to be found to be not unfrequent, and more dangerous than it is held to be now?—No; I think that a thing of that kind is really almost inconceivable. Just consider what the negative evidence is. We have now from the National Vaccine Establishment been distributing lymph for upwards of 60 years, at the rate, for the last 33 years, of considerably more than 200,000 charges a year, and we have never had an instance where any medical practitioner supplied with that lymph has found occasion to complain of any result of that kind happening from it. It is not that practitioners who get our lymph are not quite ready to complain of us if we give them any lymph that is inert, or anything of that kind; but we have not had a single instance in which it has been suggested that mischief of the sort you refer to has arisen. Then if we take the negative evidence of the army, where they have been carrying on re-vaccination on so large a scale for a great number of years, and have the men under observation for such a length of time afterwards, I think it appears that it is next to impossible as a practical thing.

5588. I think you gave some evidence with regard to Sheffield?—I mentioned Sheffield as an illustration of the evil consequences of neglect of vaccination.

5589. Has it not been recorded that at Sheffield a few years ago a small-pox epidemic began with

with the soldiers in the barracks, when there was none outside the barracks?—I believe I have seen that statement in print, but I do not know whether the statement is correct or not.

5590. Of course, if it were correct, it would appear that the small-pox had begun with the vaccinated, and not with the non-vaccinated population?—If a vaccinated person has contracted small-pox and goes into a place, there is no doubt that he may convey the small-pox to that place; small-pox does not lose its infectious qualities by appearing in a person who has been vaccinated.

5591. Have you read an article in "The Times" to-day on the subject of vaccination and small-pox?—I have not.

5592. Probably you would agree in the views of the writer, that the epidemic now is a greater epidemic than we have had at any time on record in regard to this country?—I suppose that means since we have had registration of births and deaths; it can only mean that.

5593. Of course we could only have exact knowledge of it since that time; but I understood it to go much further, and to refer even to the last century?—I venture to think that you have probably misread what was said.

5594. But at any rate we have a most violent and serious epidemic at the present time, have we not?—Yes, a most destructive one.

5595. And yet you are aware that we have had it stated here on the highest authority (that of Mr. Simon), that nearly all the population of London is vaccinated?—But that leaves a very large residuum of unvaccinated.

5596. On his showing, it would leave $2\frac{1}{2}$ per cent. unvaccinated?—Besides young babies and recent births, which were not taken into account.

5597. Of course, seeing that vaccination is compulsory, they must be vaccinated within 12 months, must they not?—Yes, but unfortunately it has not been so well attended to with regard to the early age as it should have been, until recently, when the pressure and alarm of the epidemic have caused the young children to be brought for vaccination properly; but previously, in many districts of London, and in those particularly in which the epidemic first prevailed, as Bethnal Green and Shoreditch, the vaccination of young children had been enormously neglected.

5598. Of course I have no information upon the subject; but I look upon Mr. Simon as a man of considerable authority: he stated that, in his opinion, only $2\frac{1}{2}$ per cent. of the people in the metropolis were unvaccinated; this being a very remarkable epidemic, of course, on the theory that vaccination protects against small-pox, this enormous mortality must be almost altogether confined to the unvaccinated?—It does not follow that it is altogether confined to the unvaccinated; a very large part of it is among the vaccinated.

5599. If that be so, would you not admit that the unvaccinated portion of the population of London is suffering from a scourge probably greater than any on record; because if you place the whole of the deaths and all the disease in the $2\frac{1}{2}$ per cent., the non-vaccinated portion of London, then the mortality of the disease among them must be frightful?—I do not place the whole of the deaths, nor nearly the whole of the disease, among the unvaccinated portion of the

population of London. I am cognisant that a very considerable number of vaccinated persons have had the disease, proportionably very few, but in actual number a good many. I gave the Committee a calculation the other day, which was what I considered a very extreme calculation, that you might perhaps have had altogether about 40,000 cases in London; but I did not place the whole, or nearly the whole, of those cases among the unvaccinated.

5600. Which, in your opinion, is the best protected country in Europe, so far as vaccination can protect, against small-pox?—I should suppose that now Scotland and Ireland are getting to be the best protected. They have advantages over countries like Sweden, and so on, in that they get their vaccination done at an earlier age.

5601. On the continent of Europe, which country would you consider most protected?—I should like a little more knowledge about their rules and regulations before I answered that, but I believe that Denmark, Sweden, and Norway are very well protected.

5602. Not France?—Not France.

5603. Is Prussia well protected?—Prussia is well protected, but in Prussia they leave vaccination until the children are 12 months old.

5604. Why do they leave it to 12 months old?—Such is their rule; their law has been in operation for years and years, and they have not altered it.

5605. It must be, of course, according to the best medical opinion of the country, or it would not be so?—I presume that, when they made their law, they made it according to what they considered the best medical opinion. I have mentioned in my evidence that in this country, until the Epidemiological Society called attention to it, the very large proportion of the mortality from small-pox that takes place under one year of age had not attracted the attention that it deserved.

5606. Is it not a fact, that many medical men of eminence believe that it is better not to compel children to be vaccinated at the early age at which we compel them to be vaccinated in this country, on the ground that, at the later age of six months or 12 months, they are more likely to get rid of the effects of vaccination?—I do not know that that is a general opinion. At the time we had our Epidemiological inquiry, when we corresponded with nearly 2,000 medical men, there was nothing like that opinion elicited from them; but, on the contrary, they were very anxious, as a rule, that vaccination should be done before teething time.

5607. Would you be surprised if I told you that Dr. Berckhardt, the head physician to the Children's Institution in Manchester, a very well known institution, is of opinion that it is a great mistake to compel vaccination at the early age of three months, on the ground that children at that early age, do not throw off the disease which you give them, nearly so well as children at a later age?—I cannot be surprised at individual opinions. I have no doubt that different individuals may hold different opinions. You asked me what was the opinion of the medical profession generally. I feel quite certain that I am answering you correctly when I say, that that is not the opinion of the medical profession generally.

5608. Then Prussia is not one of the best protected

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protected countries in Europe?—You are asking me about things as to which I should like to refresh my memory, but I know Prussia is well protected.

5608.* Was not it stated in the “Times” of yesterday, in the return of the Registrar General, that in the week ending 4th May, 58 persons had died of small-pox in Berlin?—That is very possible.

5609. The population of Berlin is about 800,000, or about one-fourth of the population of London. In that case would not there be almost as great a proportionate mortality in Berlin, the capital of one of the best protected countries in Europe, as we have in London?—For a particular week it would be so, but then I should want to know the whole statistics of the thing. I cannot judge of anything when I have only a single week’s return before me; and besides I must ask you to take even that return in conjunction with the statement which I made just now (not in the least knowing that you were going to confront me with this particular fact), that the Prussian population under one year of age is virtually an unprotected population.

5610. The law, I believe, is that they must be vaccinated before one year of age?—That is so.

5611. And therefore, of course, at what age they vaccinate you cannot tell?—But the tendency is very general to leave the vaccination just to the period allowed by the law. For instance, in London half at least of the vaccination is done just about the three months which the law prescribes as the age by which it must be done, or between the third and fourth months.

5612. Are you not the author of an article on vaccination in Reynolds’ “System of Medicine”?—Yes.

5613. Have you changed your views or opinions on the subject, since you contributed that article?—I do not remember that there is any point upon which I have done so.

5614. At page 275, alluding to Jenner’s first book on “Vaccination and Inoculation,” you speak of it as “that masterpiece of medical induction,” was that your own opinion, or did you quote somebody else?—That is given there as a quotation.

5615. From whom?—The authority is quoted below, “Mr. Simon’s Letter prefixed to the Papers relating to the History and Practice of Vaccination.”

5616. In that book which you called the “masterpiece of medical induction,” Dr. Jenner said that cow-pox inoculation protected the patient for ever, did he not?—Yes; you will find that statement there, but it must be taken with all the limitations and modifications with which Dr. Jenner himself insisted that it should be taken. He was writing with regard to the permanence of the vaccine protection as a rule, in opposition to a notion that it might be in itself an impermanent thing, a thing only lasting for a very short time, but he never meant to apply that statement to every individual case; on the contrary, he always insisted that cow-pox afforded the same protection as small-pox itself did, which we know, and which he knew, is not a permanent protection in every instance. In the immense majority of cases the protection, no doubt, is permanent, but it is not so in every instance.

5617. Still it seems rather a guess, and hardly worthy of having its place in a book which could

be called a “masterpiece of medical induction”?—I do not at all concur in that view. He might, no doubt, have expressed himself more guardedly. However, the particular expression, “masterpiece of medical induction,” evidently refers, not to a single statement, but to the complete way in which Jenner had worked out the whole subject of vaccination and proved his case in all its essential points by 20 years of study and observation before giving his discovery to the world.

5618. How do you get new supplies of lymph?—We do not seek new supplies of lymph; but new supplies of lymph come to us sometimes when the disease is met with in the cow.

5619. You mean, in fact, that you can take it from arm to arm, and that you never have to go for a fresh supply?—I do not know that we have had to go for a fresh supply at all. It so happens that in the history of the National Vaccine Establishment fresh supplies have been introduced on several occasions; but I believe a great deal, if not the greater part, of the lymph now in use in the Establishment is the lymph which was originally supplied by Jenner.

5620. You recommend re-vaccination, do you not?—I myself think it a very important thing.

5621. At what age would you recommend it?—I recommend it after puberty.

5622. Is there greater danger in re-vaccination than in the primary vaccination?—You get more local disturbance and more sore arms after re-vaccination than after primary vaccination.

5623. Is there no danger in re-vaccination?—I do not know that there is any danger in it; I generally like people to be in good health when they are re-vaccinated. I am particularly anxious that people should have it done, when it can be done leisurely; and that therefore they should have it done systematically, as they should have primary vaccination done, and not left till times of panic.

5624. In your article, at page 280 of the book to which I have referred, I think you use the following words with reference to re-vaccination: “The vaccine lymph may act as an animal poison, giving rise to phlegmonous erysipelas; some still rarer cases have occurred of pyæmia, terminating fatally;” have not similar untoward results sometimes followed from primary vaccination?—People have had erysipelas after primary vaccination, but that is the only thing that I know of.

5625. Ending badly sometimes?—Yes.

5626. Sometimes fatally?—Yes.

5627. You have had cases of that kind probably under your own observation?—No; but I have known of them.

5628. In primary vaccination, do you not guard your readers against taking lymph from the vesicle after the areola is formed, as it is then likely to lead to erysipelas and spurious results?—No doubt I do, because I have a very strong opinion that the lymph should be taken early.

5629. Under the head of “Method of Vaccinating,” you lay great stress on giving special attention to the health of the child; the lymph to be used in vaccinating, you say, should be taken from healthy subjects; do you think that lymph taken from unhealthy subjects is attended with danger, and may cause bad health?—All experiments hitherto made with lymph from diseased subjects show that you cannot transfer disease

disease in that way, but I do not wish to run any risks whatever that can possibly be avoided.

5630. Is it not dangerous to take lymph from the arm of an adult, and has not death followed such vaccination?—Not if the case of the adult from whom lymph is taken be a primary case, certainly. The taking lymph from cases of re-vaccination is a thing that I strongly disapprove, because such lymph certainly leads sometimes to very sore arms indeed, and oftentimes it is found to be ineffectual. I refer of course to the regular characteristic vesicle on the arm of the re-vaccinated adult. Most commonly the secondary vesicle, the vesicle of re-vaccination, has not the regular character, but is a modified or spurious vesicle, from which I apprehend nobody would think of taking lymph. But you may get on the arm of an adult re-vaccinated a vesicle to all appearance like a primary vesicle, from which some say that lymph may be taken, but I certainly do not recommend that lymph should be taken from it.

5631. *Chairman.*] Do you object to vaccinating from an adult arm because you think that the primary vesicle in an adult would be more dangerous than the primary vesicle in a baby, or because you think the vesicle caused by re-vaccination would be less likely to be effective than a vesicle caused by primary vaccination?—I do not object to the use of lymph from the vesicle of an adult under primary vaccination.

5632. *Mr. J. Bright.*] Do you agree with Mr. Marson that there is no medical means of controlling scarlatina, measles, small-pox and the eruptive fevers?—In the sense in which he meant it, I quite agree with him. There is no specific remedy whatever against those diseases. You put patients with scarlatina, measles, and small-pox in the best hygienic conditions you can, and give them support, and so on, but there is no specific medicine that will control those diseases.

5633. Are there specific medicines to control any diseases?—There is quinine for instance.

5634. But general diseases are not at all supposed to be controlled by your class of the profession by a specific medicine, are they?—Not generally.

5635. That would be rather a homœopathic view, I suppose; is it not stated by Tissot and other authorities of the last century, that the mortality from small-pox, when there was no vaccination, was not more than one-seventh of those attacked?—I should doubt it very much indeed, because my acquaintance with the medical literature of the last century has impressed me with the belief that small-pox is represented as a disease of extraordinary fatality.

5636. In the hospitals now the mortality is prodigious; I think it is stated to be about 44 per cent. of the non-vaccinated, is it not?—Yes.

5637. Do you believe it would be anything like that if the patients were treated in a different way and not taken to those hospitals?—I have no doubt that in the hospitals they may get an undue proportion of the worst cases; naturally it would be so. The worst cases are often selected for sending to an hospital, and then also there is, as Mr. Marson said, a certain degree of hospital influence which must be taken into account, so that it is quite possible, and very likely, that the mortality, taking the cases throughout London generally, is not so high outside the hospitals as it may be inside the hospitals.

5638. *Chairman.*] That danger of the hos-

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pitals must be balanced, must it not, against the better care that patients from that class are likely to obtain in the hospitals?—Quite so; the class of people that go there would no doubt be a class very badly cared for in their own homes.

5639. *Mr. J. Bright.*] To remove the patients to those hospitals is probably a great service to those from whom they are removed, but it may probably kill the person who is removed, may it not?—If they take the persons at an advanced stage of the disease that may be so, but taking the class of life from which most of the people come who go to the hospitals, no doubt their chances, upon the whole, would be better in the hospital than if they remained at home.

5640. Do you coincide with Mr. Marson in thinking that it is the father who objects to vaccination, and not the mother, in cases where there are objections to it?—I think, so far as my own knowledge of the thing is concerned, which comes from talking with people whom I see at the stations, that generally speaking, if there is objection, it comes from the father.

5641. Have you any evidence, or is there any evidence at all, to show that, as Mr. Marson says, the father objects to vaccination because he would like the family to be as small as possible that he has to work for, and that that is at the bottom of the objection to vaccination; do you endorse a view like that?—I have no evidence about that at all.

5642. Does not it appear to you to be one of the most terrible charges that was ever made against a people or against a portion of the people?—I don't think that Mr. Marson meant to convey any terrible charge.

5643. I understand you to say that you agree rather with Mr. Marson that it is the father, and not the mother, who objects?—In the cases which I can call to mind at this present moment where there has been anything like objection, it has been generally on the part of the father.

5644. Then it would be possible to bring evidence to show that the objection to vaccination is on the part of the father rather than on the part of the mother?—I could bring one or two instances of that; very curiously, in the inquiry at Middleton with regard to those children to whom the Rev. William Hume Rothery had referred, one of the mothers, at all events, had been most anxious for her children to be vaccinated, the father being an objector.

5645. It is quite possible that the father might object and that the mother might be willing, but you probably would not infer from that what has been inferred by Mr. Marson. You spoke of Middleton; are you aware that at Middleton, and those places in Lancashire, it is not generally difficult for men to support their families, and that in fact children, when they get to a moderate age, even may often, and do often, support both father and mother?—I was not thinking about that question at all; I was thinking of the mere fact whether it was the father or mother who objected to vaccination.

5646. But if the father objects and not the mother, or the mother and not the father, in some cases may not the objection arise from the fact that one of the parents has read or thought much about the subject, and that they have arrived at different opinions, one thinking that vaccination is good, and the other that it is not good?—I think the objection is more likely to arise from their having read, and taken for granted,

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granted, some of those publications that have been going about, without reflecting on the matter at all.

5647. Mr. Taylor.] You have paid a great deal of attention to the question of vaccination as a protective against small-pox, have you not?—Yes.

5648. And you have formed a very strong opinion in reference to its protective effects?—I have.

5649. And that is the result not only of your own experience, but you have, no doubt, made yourself acquainted with the writings upon the subject of those who disagree with you in opinion?—Yes.

5650. And your opinion therefore may fairly be said to have been formed on a balance of evidence, so far as it has come before you?—Yes.

5651. You are therefore, no doubt, well acquainted with the works of Dr. Nittinger, of Stuttgart, Dr. Bayard, of Cirey, and Dr. Verdè de Lisle, of Paris, late physician to the Princess Mathilde?—I read them several years ago, and I certainly did not find in those works anything that should shake the opinion I had formed.

5652. They are men, I presume, of some reputation in the medical world?—I really could not say that. I do not think they enjoy any reputation whatever in the medical world.

5653. Are you aware that Dr. Nittinger expressed the strongest opinions against vaccination?—Yes; he is very violent, I believe, upon the subject.

5654. He spoke of it, in fact, as crippling and poisoning the best energies of the nation, did he not?—I dare say he used those words.

5655. I ask those questions because we heard from Dr. Gull, the other day, that he had never heard of these authors against vaccination?—I have heard of them, because I almost make it my business to know everything about vaccination. I have read even many of those anti-vaccination pamphlets, which have recently been put forth, and which I do not suppose ever came near Dr. Gull.

5656. Are you not of opinion, that any medical man who comes before a Committee to give a very strong opinion in favour of vaccination should have made himself master, as you have done, of all that has been said on the other side?—I have not the slightest doubt that Dr. Gull has made himself master of anything and everything which he might think required attention on all sides; but those publications which you have referred to are not publications which are known to the profession, or have ever been regarded by the profession, as of any authority whatever in the matter, that I am aware of. I think that you would find that a very large number of the physicians in London would tell you that they have not read them, because they are not regarded as of any authority, or anything more than mere worthless diatribes.

5657. You refer to London physicians; are you aware that Dr. Collins, who was for many years public vaccinator at St. Pancras, also has expressed a very strong opinion against vaccination?—I am aware of that.

5658. You have, therefore, thought it your duty, naturally, to make yourself acquainted with those theories, and with any alleged facts by which they can be supported against the system of which you are so strong an advocate?—Yes.

5659. You are probably aware that Dr. Nittinger considers the vaccine lymph as a poisoner of the mucous membrane of the whole body?—Yes.

5660. Do you agree with that?—Not in the smallest degree.

5661. You regard those cases of vaccinal syphilis, if such they be proved to be, as something which will be entirely new in the experience of the profession?—Yes, in England.

5662. Are you aware of a great many cases having been alleged to have existed abroad?—I am.

5663. I presume that there is no particular reason why if they occur abroad they should not occur here?—No, but we could not inquire into and test the conditions under which those cases abroad occurred; and this was very important, for it was quite certain that many of them had occurred under conditions which, as regards the performance of vaccination, are totally foreign to the conditions under which vaccination is performed in England.

5664. Nevertheless, do you believe syphilis to have been conveyed by the process of vaccination abroad?—I know that syphilis has been communicated in what Mr. Simon called here the other day “what purported to be vaccination.” There were two instances in Germany in which that had been done, and where *malap Praxis* had been alleged against the practitioner, and where he had been punished in consequence; and I am not aware of any further instances in Germany since that.

5665. How do you suppose that in those cases syphilis was communicated by vaccination?—I presume that the vaccinator had used syphilitic matter instead of vaccine matter.

5666. You are probably aware that there were two or three witnesses (Mr. Startin for instance) who, in answer to questions in the inquiry of 1857, stated that they believed in the possibility of the transmission of syphilis?—Yes.

5667. Are you aware that Mr. Startin stated on Tuesday last that he had reported several cases of the transmission of syphilis by vaccination to Mr. Simon when he was questioned in 1856, but that he was not further questioned on the subject?—I was not present at the meeting of the Medico-Chirurgical Society the other night.

5668. Although you disbelieve in the fact of there being authenticated cases of syphilis produced by vaccination in this country, you are doubtless aware that there have been many allegations of the kind?—There have been such allegations.

5669. But you believe them not to have been well founded?—I am not aware of their being well founded.

5670. Do you believe them all to have been thoroughly examined and tested?—I do not know that they were all submitted to a critical examination, but I know that the evidence which was adduced by those who brought them forward was such as was not considered by the profession generally to stand the test of criticism.

5671. As a man of the world, I am quite sure that you will admit that the mode in which persons deal with facts is largely affected by the views which they hold upon the subject in question?—No doubt that is calculated to affect all of us, I suppose, more or less.

5672. For instance, when it was believed by the profession that syphilis could not be communicated by vaccination, the probability is, is it not,

not, that in any cases which were alleged to have arisen, the profession would have been much less inclined to believe in the possibility than they would be now?—That is quite possible.

5673. No doubt, after this time, there will be quite a different standard of exactitude of testing such cases from what there has been hitherto?—I do not doubt that medical men will be alive and alert on the matter, to a degree which they might not have been before.

5674. I believe that you are still of opinion that vaccine lymph from a syphilitic subject, un-mixed with blood, will not produce syphilis?—That is my opinion.

5675. Would you, nevertheless, hesitate, or indeed refuse to vaccinate from a syphilitic child?—Certainly.

5676. Would not that show, therefore, that your mind is not perfectly free from all alarm on that subject?—I would not have that inference drawn at all. I do not think that one has a right in those cases even to allow the remotest possibility to arise; where there is a possibility, even the remotest, that you may do wrong, you should act as if you might do wrong.

5677. In fact you will admit that your mind is not absolutely certain upon the matter?—What there is in this world which is not of a mathematical character, of which we can have absolute certainty, I do not know. I should not myself have the least fear of doing any harm, but still I do not think it a wise thing to do.

5678. Up to this time it has been a received opinion amongst medical men, has it not, that there was no danger of infecting with syphilis by the admixture of blood?—That I cannot say; opinion has varied very much about that.

5679. We have had it in evidence that the medical man who vaccinated those children whose cases have been before the public was not greatly to blame, in the opinion of the witness, for having inoculated with a mixture of blood, seeing that the profession had had no fear of that?—Yes.

5680. Apart from those cases, therefore, which have lately arisen, the danger in the opinion of the medical profession, of inoculating with syphilis, either by blood or by pure vaccine lymph, would stand upon the same basis, would it not?—I do not think so at all.

5681. Yet, I think, you agree that the vaccinator in this case was not greatly to blame in allowing the blood to be mixed with the vaccine lymph?—Excuse me, I did not say that.

5682. So far you do not agree with the witness?—No.

5683. You think that there was a certain amount of blame in that case?—Certainly; you quite misunderstood me if you thought I said the contrary.

5684. If syphilis may be (and apparently now it unhappily and undoubtedly is) communicable by vaccination, may we rest assured that no other disease is communicable by vaccination, such as any form of scrofula, gout, and other diseases?—These are not inoculable diseases; syphilis is an inoculable disease as vaccinia is itself; but I do not know that you can inoculate a man with gout.

5685. Is there no other disease which may be communicated by the blood in the same way as syphilis?—I cannot off-hand recollect all the evidence as to conveyance of diseases by inoculation through the blood, but practically I think that there is no fear whatever of our communicating any other disease by vaccination.

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5686. Any other but syphilis?—No.

5687. That you think may be avoided with sufficient and the greater precautions which are now likely to be taken?—I do.

5688. I think you stated that out of 380 unions, 260 had obeyed this Act by appointing vaccination officers?—I do not think that you have the number correctly. I think there were 260 unions inspected last year, and out of the 260 there were 120 which had not an officer.

5689. How is the Act carried out in those unions where they have not appointed an officer?—I could not tell you without a little further inquiry, but in some of them the thing may be done by the registrars on their own motion, in others it may be done possibly by the clerk of the union, and in others very likely no steps have been taken to carry out the Act properly at all.

5690. It may be done by the registrar without the authority of the guardians, may it not?—Yes.

5691. Or against their wish?—Yes, the registrar has authority under section 31 to take proceedings in any case.

5692. Irrespective of the guardians?—Irrespective of the guardians.

5693. Dr. *Brewer*.] Did you hear it stated in one of the answers in the examination about this alleged case of syphilis, that the eruption had received confirmation as being syphilis by the effect of the specific treatment adopted?—I did hear that.

5694. Do you consider that high medical authority agreed to the statement, that there is a specific treatment for a syphilitic disease communicated indirectly through the circulation or directly through impure connection?—Yes, I suppose so.

5695. Is there not extant evidence that in various trades, such as the separation of silver by means of mercury from mixed ores, or backing looking glasses, both sexes and all ages have been attacked with disease similar to secondary or tertiary syphilis?—Yes, I have no doubt of that.

5696. Without any syphilitic taint?—Yes, you mean mercurial disease, I presume.

5697. Strictly like the syphilitic disease?—Quite so.

5698. In the case of papulous eruptions, or of those superficial brown ulcers treated with mercurial treatment, has there not often been seen a great aggravation of all the symptoms?—I dare say that is very possible.

5699. Did you know the late Robert Liston?—Yes.

5700. Did you know Professor Millar?—I did not know him.

5701. Are you aware that they refused to recognise mercury as a specific in the treatment of venereal disease?—Yes; and John Thomson also, and many at that time.

5702. Then it is a fact, is it not, that mercury is not uniformly, and by very high authorities, deemed to be a specific treatment for syphilitic disease?—There was at one time considerable difference about that, and John Thomson particularly used to ascribe to mercury the very effects which others used to ascribe to syphilis.

5703. Did not Liston and Millar also hold that view?—Very likely you are right, but I do not speak of my own knowledge about those two gentlemen.

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5704. Have

Mr. *Seaton*,

M.D.

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Mr. Seaton, 5704. Have you seen Professor Millar's paper which was published upon the subject?—I have not read it.

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5705. Have you seen cases of disease produced in a common sore by accidental contact with foul linen?—Yes; by accidental contact of various kinds, without any doubt.

5706. Do you know any case of syphilitic disease having been communicated by the finger of a person upon which there was a syphilitic sore?—Certainly.

5707. Is it possible, therefore, that that which has been attributed directly to vaccination may have been the result of such contact as this, either with foul linen or with the fingers of those who treated it?—I think that is exceedingly probable in some instances, but in this particular case there were several persons infected.

5708. Is it an undoubted fact in the profession that those things have occurred without being traced?—Certainly.

5709. Do you think that vaccination from house to house by a medical officer known in the district and to the poor themselves, would greatly obviate the objections entertained against vaccination?—But you cannot have vaccination from house to house in a large community like this: it is not practicable, besides which you would lose all the benefit of getting the children together and vaccinating them with lymph from child to child.

5710. Is not one of the difficulties that of the parent being compelled to leave her home with a child at a fixed hour to repair to an establishment to attend till her turn comes, and often to lose the greater part of the day after all, finding that she is remitted for a future day without having had her child vaccinated?—No; under the old plan, when we had a number of stations, it was not so very uncommon a thing for a parent to have to return home with a child unvaccinated because there was no fresh lymph to vaccinate it from, and because either the vaccinator had no preserved lymph, or because he was one of those (of whom I am glad to say there are many) who always prefer to wait for a child before they do vaccinate. Under that system it was not an uncommon thing, but I do not suppose that it could happen now, at any of our stations properly established, for a person not to get her child vaccinated on going at the appointed day, and at the appointed time.

5711. Considering that the epidemic now raging in the metropolis is deemed to be of a severe character, do you consider that the mortality is large from 3,200,000 inhabitants?—No; I stated in my evidence the other day that though the epidemic is of an intensity such as I have not known, yet considering that it is of this intense character, the amount of mortality is not at all more than one might expect from the number of unvaccinated and imperfectly vaccinated people that there must be in London; and, as I said then, I am afraid that there is plenty of field for more mortality.

5712. Do you believe that hospitals have acted prejudicially to the poorer classes who have been admitted into them under the influence of disease?—That is a question which I have not gone into in the least.

5713. Would you be surprised to hear that the majority of deaths occurring in the hospitals have occurred in the first three or four days after

admission?—Probably the people were moved too late.

5714. Do you think that anything like 97½ per cent. of the population of the metropolis are vaccinated satisfactorily, and are thoroughly protected by vaccination?—No; a good many of the 97½ per cent., assuming that 97½ per cent. have been vaccinated, will not have had perfect vaccination, no doubt, and it is the result of that which you will have seen at the Small-pox Hospitals.

5715. In St. Luke's, Middlesex, has there recently been an examination from house to house?—I cannot tell you off-hand; I have not the facts.

5716. With regard to the subject of the difficulty of getting to a vaccine station, is not the Prince of Wales' Road station in St. Pancras, an extraordinary long distance from the northern extremity of the parish?—As I mentioned before, when I was under examination by the Right Honourable Chairman, I have no detailed knowledge about the proposed arrangements for St. Pancras: they have not been before us yet, and I cannot speak about them until I have them regularly before me, when I shall go and examine and see what the stations are.

5717. Did you know the late Professor Alison?—Yes, very well indeed.

5718. Do you know his opinion upon the subject of the protective character of vaccination?—I think you will find it quoted in my evidence the other day.

5719. Did Professor Alison rank very high indeed among the Pathological Professors of Edinburgh?—Assuredly, no one ever ranked higher.

5720. Was he a man who ranked high in the profession?—He was a foremost man in the estimation of the whole medical world, I should say.

5721. Is an opinion of Professor Alison's likely to guide those who are great students in physiology?—I think so.

5722. Had he any doubt whatever on the subject of vaccination?—You heard the strong terms in which he has expressed himself about it.

5723. Did you know Dr. Nittinger?—Not in the least; but I have seen his book.

5724. Do you know whom he quotes as great authorities in England, supporting his views?—No; it is a long while since I read that book of Dr. Nittinger's; I thought it great rubbish, I know, and I put it on one side after looking at it; but I could not remember anything of it now, not having seen it for many years.

5725. Will you be good enough to cast your eye over the names of the physicians there mentioned (*handing a book to the Witness*), and tell me if they influence society in the same way as Dr. Alison did?—There is not a single one among them who is of any authority whatever, or who is regarded as of any authority whatever, among the medical profession generally. They are not in the smallest degree authorities, any one of them.

5726. But Professor Alison is, or was, the very highest authority, was he not?—I should say so certainly in the estimation of the medical profession.

5727. Have we any proof, or could you bring forward any proof that vaccination has diminished the number of deaths among those of the population who have been attacked by small-pox, and that where vaccination has been temporarily suspended,

pendent, the disease has assumed all its former virulence; taking Denmark, for instance, which I think came under your investigation as a member of the Epidemiological Society?—Yes; but the investigation was a long while ago, and I cannot remember every detail of it.

5728. Denmark before 1810 lost, from your account, over 3,000 persons in Copenhagen alone in one year?—I have no doubt that that would be so.

5729. Do you know what was the mortality from 1810 to 1825, when vaccination was made compulsory?—I should have to look up the case again to be able to answer that question.

5730. Did the disease almost entirely disappear?—I know it did practically.—All those facts are on record.

5731. How many thousand vaccine cicatrices have you seen at various periods from primary vaccination?—If I were to say that I have seen and examined the cicatrices on the arms of 200,000 persons, I should be very much short of the mark, I am quite sure.

5732. Have you any satisfactory knowledge in your own mind of the indication from a cicatrix whether the vaccination has been properly performed?—Of course one can tell.

5733. What proportion do the satisfactory cicatrices bear to the unsatisfactory cicatrices in the metropolis?—That would vary at different times, and in different places. I cannot tell you now what the proportion would be.

5734. Does the number of good and satisfactory cicatrices bear a ratio of one-half to the unsatisfactory ones?—Of course there are a great many more than one-half of the cicatrices which are of good character, but what number of cicatrices persons on an average might exhibit, I could not tell you, without reference.

5735. I wish to ascertain the amount of protection which the metropolis enjoys, with respect to vaccination?—I have a table which shows exactly how we found the children in 1863, but to answer that question as regards the period which has since elapsed, further inquiry would be needed.

5736. Is there any practical difference between the perfectly and imperfectly protected, that is to say, practically speaking, is it of any consequence to the metropolis whether persons are perfectly or imperfectly vaccinated?—There is an immense difference.

5737. An imperfectly formed cicatrix may indicate a man to be more or less unprotected, may it not?—Quite so.

5738. Is there any means of ascertaining by a secondary operation of vaccination whether or not the original vaccination was imperfect?—I do not think that that is a test. I have seen very fine secondary vesicles on the arms of persons who were perfectly protected, so far as the scars went, by the primary operation.

5739. Do you consider that a person who has been thoroughly vaccinated is better protected against an attack of small-pox than a man who has been previously attacked by small-pox?—I do not know that I could say that, but he is probably as well protected.

5740. But not more so?—No.

5741. It is your observation that more people who have had a previous attack of small-pox have been seized with a second attack than those who have been well vaccinated?—No, that was not my observation.

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5742. Are there any means which you could possibly take which you think would protect the whole metropolis from the recurrence of small pox epidemics?—I could not undertake that I should entirely exclude small-pox epidemics, but I could perfectly undertake, if I had my own way, that you should not have any severely fatal small-pox epidemic.

5743. Dr. L. Playfair.] I think you stated that you went down personally to Middleton to inquire into the circumstances brought under the examination of the Committee by the Rev. Mr. Hume Rothery?—I did.

5744. Did you see the vaccinifer in that case?—I did.

5745. Is the vaccinifer quite well now?—It is a remarkably jolly child.

5746. Did you see the parents of the vaccinifer?—I did.

5747. Did you ascertain whether the vaccinifer, who Mr. Rothery hinted to us, had extended syphilis, had ever had syphilis at all?—It had never had syphilis, and had never had a doctor from the time it was born to the present time, when it is four years old, except once when a plate rack fell upon it and it got its head wounded.

5748. Then is it quite a mistake to suppose that that child ever conveyed syphilis?—Yes; it has never had the smallest symptom of syphilis.

5749. Mr. Rothery gave it in evidence that six deaths had resulted, and that his impression was that they resulted from syphilis; you gave us four of those cases; can you give us the other two?—Mr. Rothery was mistaken, there were only five deaths, and only five vaccinations from the source to which you refer. There was a sixth child vaccinated on the same day with those five, but that sixth child was vaccinated from another source.

5750. Then there were five cases instead of seven, as he believed?—Yes.

5751. You gave one of measles, one of consumption, one of convulsions, and one of typhoid fever; will you give the other case?—There was one of teething.

5752. At what age was the teething?—The child was vaccinated when it was two months old, and it died when it was 12 months old.

5753. Is there the slightest reason for believing that the deaths of any of those children resulted directly or indirectly from the effects of vaccination?—Not the smallest.

5754. Do you know Dr. Stallard?—Yes.

5755. Has he paid considerable attention to vaccination?—A good deal.

5756. I think that the Committee agreed formerly that he would address to you his views as to the change of the law in order to save calling another witness; has he given you any report?—Yes, he has given me various suggestions with regard to the amendment of the Act. They are mostly suggestions of detail, but some of them are suggestions of principle.

5757. Will you hand them in?—I will do so.—*(The same were handed in, see Appendix.)*

5758. Do you recollect the Bill of 1853 before it became an Act?—It underwent, I believe, certain changes, but I cannot say that at this time I remember what the particular changes were.

5759. Do you recollect one intended clause which does not appear in the Act, that a school-

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Mr. Seaton,
M.D.
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12 May
1871.

master should be fined for admitting an unvaccinated child into his school?—I do not remember that clause, but it is very possible that there might have been some such clause, because there was a strong feeling that there ought to be some way of excluding unvaccinated children from schools.

5760. Was that provision excluded at your recommendation?—Certainly not; but I do not recollect the provision at all. The Act of 1853 was passed nearly 20 years ago.

5761. Do you recollect another provision in it, that persons arriving in the country from foreign parts, either Ireland or Scotland, or other parts, should be examined as to whether they were vaccinated?—I do not know whether any provision of that kind was made in the Bill, but I know that it was pointed out that Scotland and Ireland were at that time in such a state that anything which we might have done in this country would have been very imperfect unless we put ourselves in some degree of protection against both the Scotch and the Irish. I see now, on referring to our Report, that that provision was in the Bill, because there is a reference to a clause requiring children born in Scotland and Ireland and abroad to be vaccinated within a certain time after their arrival in England and Wales.

5762. And that was excluded?—I suppose it was.

5763. *Chairman.*] The impression that there was great danger from Scotland and Ireland which caused that clause to be put into the English Bill arose before the Vaccination Acts were brought into force in Scotland and Ireland, did it not?—Yes, the Vaccination Acts for Scotland and Ireland were only passed in 1863.

5764. *Dr. L. Playfair.*] I presume that now, since the passing of the Compulsory Act, you would not be in the least degree alarmed by children coming from Scotland or Ireland?—Certainly not; the thing is quite different, and indeed quite the reverse. It is now Scotland and Ireland that must guard themselves against us.

5765. With regard to the feeling that we are now subject to the greatest epidemic which has occurred for a long time, what was the average mortality from small-pox in the last century in London alone?—Two thousand.

5766. At that time, was not the population only one-fifth of what it is at present?—I do not think it was quite as much.

5767. That would make an average mortality upon our present population of 10,000 at the present time, would it not?—Yes.

5768. Supposing that the epidemic continues for the remainder of the year to the extent to which it has gone on in the past year, the deaths would be 7,500, would they not?—I think I made them somewhat fewer than that, because I take the period of the epidemic to begin from the last quarter of last year, and if you apply that proportion to the year, it would make somewhere under 7,000. I gave the numbers the other day, according to my own calculation.

5769. Would not that represent much less than the average mortality of the last century in non-epidemic times?—Less than in average times; mixed epidemic and non-epidemic times.

5770. So that the mortality at the present moment is not alarming as an epidemic, compared with the epidemics of history?—It is

nothing as compared with the epidemics of history.

5771. *Mr. Cave.*] It is mentioned in a book by Mr. Wilkinson, which has been circulated among the Members of the Committee, that when the mortality caused by one disease rises, that caused by another falls, and that nothing is gained or lost by the presence of an epidemic; is that your opinion?—Not at all.

5772. Is it the fact that the death-rate has been larger during the period since the commencement of the epidemic than it was before?—During the present epidemic I believe that the general death-rate has not been increased.

5773. Does not that rather bear out the doctrine or rule that when small-pox is present other diseases are absent, so that there is no real loss?—The fact may be so in a particular year, but it is not a doctrine or rule; you may have small-pox and other diseases prevailing at the same time, or you may have small-pox prevailing and other diseases absent.

5774. Then you would say that that was a casual coincidence, in which small-pox being prevalent other diseases were absent?—Quite so.

5775. And the one is not the cause of the other?—Not in any way whatever.

5776. You mentioned a considerable difficulty which occurred with regard to the clashing of different departments; do you find that difficulty to arise in all sanitary arrangements?—Yes.

5777. Would that point to the re-constitution of a department in London having under it all sanitary matters?—Quite so; there ought to be something of that sort no doubt, and we are anxiously hoping for it.

5778. If there were one central authority in London, and one local authority in each district of the country, having cognizance of sanitary matters, the latter acting under the former, do you think that would be a great advantage in the case of epidemics and in sanitary matters generally?—Of enormous advantage.

5779. *Chairman.*] With regard to a question asked by my right honourable friend, as to the general death rate not being increased by this epidemic, you have had your attention drawn, I suppose, to the fact, that there appears to be a law at present in operation by which, notwithstanding epidemics, the general mortality does not seem to be very much increased?—At the present moment in London, notwithstanding the prevalence of small-pox, there is no very large increase, and, indeed, I do not know whether there is any increase at all.

5780. The inference drawn from that is, that if there was no attempt to protect against small-pox those who died of small-pox, they would die of some other disease; but is not the state of facts from which this law is deduced a state of facts which has this basis: that there is at this moment an attempt to check all diseases, so far as the profession can do it in London?—Quite so.

5781. Therefore, if the attempt to check any one of the diseases was given up, the probability is that there would be an increase of mortality?—Of course. If you had no vaccination, you may depend upon it that you would not be able to say that the mortality in London at this time was not something very enormously in advance of its ordinary mortality.

5782. In fact, if it were not for vaccination, this epidemic, which is evidently in its intrinsic character a very destructive epidemic, might be expected

expected to become a pestilence similar to the pestilences of former centuries?—Certainly a most destructive pestilence. You have only to look at what it is in Holland now, where the mortality is enormously in excess of our own.

5783. Are you also aware that there appears to be a very curious similarity in the number of deaths resulting from violence in London every year?—I have not looked into that matter.

5784. Sir *S. Child.*] You were asked about the deaths in Berlin, as to the statement that 58 had died in Berlin in a week, and the inference was drawn that Prussia being a highly protected country, this was extraordinary?—Yes, but I did not admit it to be extraordinary.

5785. As the children in Prussia are not vaccinated until they are 12 months old, and also as probably there are a great many French prisoners in Berlin, probably many of those deaths are deaths of children under 12 months old, or French prisoners?—Exactly, that is what I consider is the state of things.

5786. The Honourable Member for the University of Edinburgh asked you about five children at Middleton, and you say that none of them

died from vaccination?—No, nor till very long after their vaccination.

5787. And certainly none of them died from syphilis?—No.

5788. You are the inspector of vaccine establishments throughout the country, are you not?—Yes.

5789. How often do you visit the stations in the country?—I go round from time to time as I may have the opportunity of doing so; I do not take the whole country. We have several inspectors. My own inspection is limited to the metropolis, Birmingham, Manchester, Liverpool, Newcastle, and three or four more towns.

5790. How often do you inspect those places?—I go to those towns frequently, but the general system of inspection through the country takes our inspectors to each union every second year.

5791. Do you not think it desirable that there should be more frequent inspection?—I do indeed, but we are obliged to do the best we can with what the liberality of Parliament gives us.

5792. Do you think it desirable that there should be more public inspection?—Certainly.

Mr. Seaton,
M.D.
12 May
1871.

Mr. WILLIAM BREWER, M.D., a Member of the Committee; Examined.

5793. *Chairman.*] HAVE you prepared statistics with reference to this inquiry in regard to the present epidemic, and the hospitals which are under the Metropolitan Asylums Board?—I have.

5794. Will you be prepared to hand them in before the Committee makes its Report?—Yes.

Mr. Brewer,
M.D., M.P.

Friday, 19th May 1871.

MEMBERS PRESENT:

Dr. Brewer.
Mr. Jacob Bright.
Mr. Candlish.
Mr. Alderman Carter.
Mr. Stephen Cave.
Sir Smith Child.
Mr. William Edward Forster.

Mr. Hibbert.
Mr. Holt.
Lord Robert Montagu.
Mr. Muntz.
Dr. Lyon Playfair.
Mr. William Henry Smith.
Mr. Taylor.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. JOHN SIMON, F.R.S., called in; and further Examined.

Mr.
J. Simon,
F.R.S.

19 May
1871.

5795. *Chairman.*] I FIND that in answer to questions respecting the comparison of those who were vaccinated in London with those who were unvaccinated in two or three cases, and specially in answer to Question 3045, you stated that the upshot of the figures was that about $4\frac{1}{2}$ per cent. of the population of London were unprotected. I understand that there is a difference of opinion as to what you meant by protection. What was the precise meaning which you attached to the word?—The word “protected,” as generally used in our statistical discussions about small-pox, includes all persons who may be presumed to have any degree, however slight, of protection, either against the attack, or against the severity of small-pox. Consequently, whenever I speak of a protected class, I mean to include, as far as possible, all persons who have already had small-pox, or who bear any mark, good or bad, of previous vaccination. The word “protection” is not used with reference to either of those cases in an absolute, but in a comparative and presumptive, sense.

There may be small-pox after small-pox, and there may be small-pox after vaccination, the frequency and severity of the latter varying in a very wide range, according to the quality of the vaccination. The unprotected class would mean those who cannot be ascertained to have had small-pox, or to have had any, whether good or bad, vaccination.

5796. Then the word “protection,” in those answers does not mean absolute protection or real protection, which might be supposed in general language to be the meaning of the word, but it has the particular meaning attached to it in scientific discussions, that it is some kind of protection, great or small?—It is used in quite a technical sense, including all degrees and kinds of protection.

5797. Have you any suggestions of detailed amendments on the Act which you wish to make to the Committee?—With the permission of the Committee, I will hand in a Paper stating the principal suggestions which I have to make.—*(The same was delivered in. See Appendix.)*

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A P P E N D I X.

Appendix, No. 1.

STATEMENT of the DISTRIBUTION of FUNCTIONS concerning PUBLIC VACCINATION in ENGLAND.

Appendix, No. 1.

THE Lords of the Council have power to make general regulations as to the arrangements for public vaccination and re-vaccination, and as to the qualifications of contractors. They have also power to make inquiries as to the execution of the Act, and to distribute to public vaccinators the Parliamentary Grant for successful vaccinations.

The Poor Law Board have to approve all contracts for vaccination, having regard as well to the terms of the same as to the possession of the requisite qualifications by the contractor, and can determine any contract made under the Vaccination Act, 1867.

Under the power to make inquiries, and in order to ascertain the persons deserving of reward from the Parliamentary Grant, the Inspectors of the Lords of the Council make periodical inspection of, and report on, the vaccination of every union in England and Wales, an inspection which includes the quantity and quality of the vaccinations performed, and the suitability of the special provisions for public vaccination in each union.

The Medical Department, being thus in possession of information as to the vaccination of each union, and having Inspectors acquainted with the wants of each district, is in a position to advise the Poor Law Board in regard to the arrangements proposed by guardians for public vaccination.

Each public vaccinator's contract with the guardians fixes the district for which he is to act, the times and places at which public vaccinations are to be performed, and the fee to be paid for each vaccination; and contains stipulations as to the transmission of certificates by the public vaccinator according to law, and his observance of the regulations of the Lords of the Council relating to public vaccination.

It is the duty of the guardians to enforce the law, and for this purpose to examine the half-yearly lists of defaulters, and take the necessary proceedings thereon; and they are empowered to appoint an officer to make the inquiries, and take the proceedings which may be needed to secure the due execution of the Act.

Appendix, No. 2.

PAPERS handed in by Mr. *Gibbs*, 14 March 1871.

Appendix No. 2. COMPARATIVE STATEMENT of MORTALITY from SMALL-POX in the BRITISH ARMY, and the WHOLE POPULATION of *England* and *Wales*, of Five Years of Age and Upwards.

BRITISH ARMY.

EXTRACTS from Dr. Seaton's "Handbook of Vaccination." Page 244.

TABLE showing the Cases and Deaths from Small-pox among the Troops serving in the United Kingdom for Six Years.

YEAR.	Number of Troops.	Cases.	Deaths.	Rates per 10,000 of Strength.	
				Cases.	Deaths.
1859 - - -	71,715	175	7	24.3	0.97
1860 - - -	85,443	140	9	16.8	1.05
1861 - - -	88,955	51	4	5.9	0.45
1862 - - -	78,173	64	4	8.1	0.51
1863 - - -	75,945	123	6	16.2	0.79
1864 - - -	73,252	111	10	15.1	1.36
TOTAL - -	473,483	664	40	14.0	0.84

TABLE for GENERAL POPULATION of Five Years and Upwards.

YEAR.	Cases.	Deaths.	Rates per 10,000 of Population.	
			Cases.	Deaths.
1859 - - -	Not known	1,601	Not known	0.82
1860 - - -		1,205		0.61
1861 - - -		597		0.30
1862 - - -		697		0.36
1863 - - -		2,697		1.32
1864 - - -		3,390		1.65
MEAN - -	Not known	1,698	Not known	0.84

LONDON.

STATEMENT respecting the SMALL-POX MORTALITY in *London* during Seven Weeks, 4th March 1871.

Week Ending	Specified as Vaccinated.	Specified as not Vaccinated.	Not Specified.	TOTAL.
21 January - - - - -	17	66	105	188
28 " - - - - -	20	54	79	153
4 February - - - - -	65	99	32	196
11 " - - - - -	72	101	38	211
18 " - - - - -	78	121	19	218
25 " - - - - -	86	119	22	227
4 March - - - - -	72	106	35	213
11 March - - - - -	74	96	23	193

Circular to District Registrars issued on the 28th January by Registrar General, requesting attention to the Division into Vaccinated and not Vaccinated of those who died by Small-pox.

SMALL-POX AND VACCINATION IN FRANCE.

1865.

TABLE III.

SUMMARY of the Proportions shown in Table II., arranged to contrast the Least Vaccinated with the Most Vaccinated Portions of the Country.

Number of Departments in France.	Per-centage of Vaccinations and Re-Vaccinations to Births.	Per-centage of Small-pox Cases to Births.	Per-centage of Small-pox Deaths to Births.	Per-centage of Small-pox Deaths to Small-pox Cases.
SEVENTY-FIVE, all for which the Reports are complete,—extremes -	18 to 129	0·00 to 32·25	0·00 to 9·64	0·0 to 29·9
Average - - -	66·5	4·69	0·42	9·0
TEN, in which Vaccination is <i>least</i> practised,—extremes - - -	18 to 33	0·24 to 3·36	0·00 to 0·37	0·0 to 19·2
Average - - -	28·6	1·69	0·16	9·62
TEN, in which Vaccination is <i>most</i> practised,—extremes - - -	92 to 129	2·49 to 32·25	0·18 to 9·64	1·2 to 29·9
Average - - -	100	10·64	1·06	9·9
22, in which the proportion of Vaccinations to Births does not exceed 50 per cent.,—extremes - - -	18 to 49	0·24 to 20·62	0·00 to 1·34	0·0 to 19·2
Average - - -	37	2·22	0·17	7·7
53, in which the proportion of Vaccinations to Births is more than 50 per cent.,—extremes - - -	53 to 129	0·00 to 32·25	0·00 to 9·64	0·0 to 29·9
Average - - -	79	7·9	0·52	9·1

SUMMARY OF AVERAGES.

	Ten Departments.		Departments.	
	Least Vaccinated.	Most Vaccinated.	22 Least Vaccinated.	53 Most Vaccinated.
Small-pox Cases to Births - -	1·69	10·64	2·22	5·69
Small-pox Deaths to Births - -	0·16	1·06	0·17	0·52
Small-pox Deaths to Cases - -	9·62	9·9	7·7	9·1

SMALL-POX AND VACCINATION IN FRANCE.

1866.

TABLE III.

SUMMARY of the Proportions shown in Table II., arranged to contrast the Least Vaccinated with the Most Vaccinated Portions of the Country.

Number of Departments in France.	Per-centage of Vaccination and Re-Vaccinations to Births.	Per-centage of Small-pox Cases to Births.	Per-centage of Small-pox Deaths to Births.	Per-centage of Small-pox Deaths to Small-pox Cases.
SEVENTY-EIGHT, all for which the Reports are complete,—extremes -	12 to 122	0·0 to 27·0	0·0 to 6·0	0·0 to 28·6
Average - - -	63	3·2	0·39	12·4
TEN, in which Vaccination is <i>least</i> practised,—extremes - - -	12 to 25	0·0 to 3·2	0·00 to 0·38	0·0 to 15·5
Average - - -	26	1·0	0·11	10·7
TEN, in which Vaccination is <i>most</i> practised,—extremes - - -	95 to 122	1·4 to 14·2	0·2 to 1·53	5·6 to 17·8
Average - - -	104	5·7	0·63	11·1
23, in which the proportion of Vaccinations to Births does not exceed 50 per cent.,—extremes - - -	12 to 50	0·0 to 4·3	0·00 to 0·44	0·0 to 21·4
Average - - -	35	1·3	0·11	8·5
55, in which the proportion of Vaccinations to Births is more than 50 per cent.,—extremes - - -	51 to 122	0·0 to 27·0	0·00 to 6·0	0·0 to 28·6
Average - - -	75	4·0	0·52	12·9

SUMMARY OF AVERAGES.

	Ten Departments.		Departments.	
	Least Vaccinated.	Most Vaccinated.	23 Least Vaccinated.	55 Most Vaccinated.
Small-pox Cases to Births - -	1·0	5·7	1·3	4·3
Small-pox Deaths to Births - -	0·11	0·63	0·11	0·52
Small-pox Deaths to Cases - -	10·7	11·1	8·5	12·9

SMALL-POX AND VACCINATION IN FRANCE.

1867.

TABLE III.

SUMMARY of the Proportions shown in Table II. arranged to contrast the Least Vaccinated with the Most Vaccinated Portions of the Country.

Number of Departments in France.	Per-centage of Vaccinations and Re-Vaccinations to Births.	Per-centage of Small-pox Cases to Births.	Per-centage of Small-pox Deaths to Births.	Per-centage of Small-pox Deaths to Small-pox Cases.
SEVENTY-SEVEN, all for which the Reports are complete,—extremes -	16 to 133	0·0 to 15·14	0·0 to 1·69	0·0 to 725
Average - - -	65	2·08	0·22	10·1
TEN, in which Vaccination is <i>least</i> practised,—extremes - - -	16 to 26	0·0 to 4·4	0·00 to 0·42	0·0 to 21·2
Average - - -	24	0·88	0·01	9·7
TEN, in which Vaccination is <i>most</i> practised,—extremes - - -	93 to 133	0·0 to 14·2	0·0 to 1·59	0·0 to 20·0
Average - - -	105	4·27	0·49	11·6
23, in which the proportion of Vaccinations to Birth does not exceed 50 per cent.,—extremes - - -	16 to 50	0·0 to 4·4	0·00 to 0·42	0·00 to 37·5
Average - - -	34	0·83	0·08	9·2
54, in which the proportion of Vaccinations to Births is more than 50 per cent.,—extremes - - -	51 to 133	0·0 to 15·14	0·10 to 1·69	0·0 to 72·5
Average - - -	77	2·54	0·28	10·6

SUMMARY OF AVERAGES.

	Ten Departments.		Departments.	
	Least Vaccinated.	Most Vaccinated.	23 Least Vaccinated.	54 Most Vaccinated.
Small-pox Cases to Births - -	0·88	4·27	0·83	2·54
Small-pox Deaths to Births - -	0·01	0·49	0·03	0·28
Small-pox Deaths to Cases - -	9·7	11·6	9·2	10·6

Appendix, No. 3.

Appendix, No. 3. PAPERS handed in by Mr. *Gibbs*, and referred to in his Evidence, 17 March 1871.

ENGLAND AND WALES.

STATEMENT respecting SMALL-POX MORTALITY among PERSONS of all Ages, during Thirty Years, 1839 to 1868, inclusive, in *England and Wales*.

VACCINATION, VOLUNTARY.			VACCINATION, COMPULSORY.		
YEAR.	Number of Deaths.	Death-rate per Million of Population.	YEAR.	Number of Deaths.	Death-rate per Million of Population.
1839 - - - -	9,131	589	1854 - - - -	2,808	153
1840 - - - -	10,434	664	1855 - - - -	2,525	136
1841 - - - -	6,368	400	1856 - - - -	2,277	121
1842 - - - -	2,715	169	1857 - - - -	3,936	206
1843 - - - -	—	—	1858 - - - -	6,460	335
1844 - - - -	—	—	1859 - - - -	3,848	197
1845 - - - -	—	—	1860 - - - -	2,749	140
1846 - - - -	—	—	1861 - - - -	1,320	66
1847 - - - -	4,227	247	1862 - - - -	1,628	81
1848 - - - -	6,903	400	1863 - - - -	5,964	293
1849 - - - -	4,644	267	1864 - - - -	7,684	373
1850 - - - -	4,666	263	1865 - - - -	6,411	309
1851 - - - -	6,997	396	1866 - - - -	3,029	144
1852 - - - -	7,320	409	1867 - - - -	2,513	118
1853 - - - -	3,151	174	1868 - - - -	2,052	96
TOTAL Deaths - -	66,556	3,978	TOTAL Deaths - -	55,204	2,768
		÷ 11 =			÷ 15 =
Mean Death-rate - -	- - -	362	Mean Death-rate - -	- - -	184

The gain in the latter period, as shown by the difference of the Mean Death-rates, is 178 per million of population, equivalent, on 20,000,000, to an actual diminution of mortality of 3,560 per annum; in the 15 years, 53,400.

ENGLAND AND WALES.

STATEMENT respecting MORTALITY from all Causes among PERSONS of all Ages during Thirty Years, 1839 to 1868, both inclusive, in *England and Wales*.

VACCINATION, VOLUNTARY.			VACCINATION, COMPULSORY.		
YEAR.	Number of Deaths.	Death-rate per 100,000 of Population.	YEAR.	Number of Deaths.	Death-rate per 100,000 of Population.
1839 - - - -	338,984	2,185	1854 - - - -	437,905	2,352
1840 - - - -	359,687	2,288	1855 - - - -	425,703	2,261
1841 - - - -	343,847	2,159	1856 - - - -	390,506	2,051
1842 - - - -	349,519	2,168	1857 - - - -	419,815	2,180
1843 - - - -	346,445	2,123	1858 - - - -	449,656	2,309
1844 - - - -	356,933	2,161	1859 - - - -	440,781	2,239
1845 - - - -	349,366	2,089	1860 - - - -	442,721	2,124
1846 - - - -	390,315	2,306	1861 - - - -	435,114	2,163
1847 - - - -	423,304	2,471	1862 - - - -	436,566	2,147
1848 - - - -	399,823	2,306	1863 - - - -	473,837	2,305
1849 - - - -	440,839	2,512	1864 - - - -	495,531	2,386
1850 - - - -	368,995	2,077	1865 - - - -	490,909	2,339
1851 - - - -	395,396	2,199	1866 - - - -	500,689	2,361
1852 - - - -	407,135	2,238	1867 - - - -	471,073	2,198
1853 - - - -	421,097	2,288	1868 - - - -	480,622	2,220
TOTAL Deaths - -	5,691,695	33,570	TOTAL Deaths - -	6,771,428	33,635
		÷ 15 =			÷ 15 =
Mean Death-rate - -	- - -	2,238	Mean Death-rate - -	- - -	2,242

The loss in the latter period, as shown by the difference of the Mean Death-rates, is 40 per million of population, equivalent, on 20,000,000, to an actual increase of mortality of 800 per annum. In the 15 years, 12,000. Cholera prevailed epidemically in the years 1849, 1854, and 1866.

ENGLAND AND WALES.

Appendix, No. 3.

STATEMENT respecting SMALL-POX MORTALITY among CHILDREN under Five Years of Age during Thirty Years, 1839 to 1868, inclusive, in *England and Wales*.

VACCINATION, VOLUNTARY.			VACCINATION, COMPULSORY.		
YEAR.	Number of Deaths.	Death-rate per Million of Population.	YEAR.	Number of Deaths.	Death-rate per Million of Population.
1839 - - - -	—	—	1854 - - - -	1,659	90
1840 - - - -	—	—	1855 - - - -	1,323	71
1841 - - - -	—	—	1856 - - - -	1,299	69
1842 - - - -	—	—	1857 - - - -	2,335	122
1843 - - - -	—	—	1858 - - - -	3,585	186
1844 - - - -	—	—	1859 - - - -	2,247	115
1845 - - - -	—	—	1860 - - - -	1,544	79
1846 - - - -	—	—	1861 - - - -	723	36
1847 - - - -	3,114	182	1862 - - - -	931	45
1848 - - - -	4,782	277	1863 - - - -	3,267	161
1849 - - - -	3,146	194	1864 - - - -	4,294	208
1850 - - - -	3,265	184	1865 - - - -	3,262	157
1851 - - - -	4,869	271	1866 - - - -	1,662	79
1852 - - - -	5,076	284	1867 - - - -	1,370	64
1853 - - - -	2,164	120	1868 - - - -	1,234	58
TOTAL Deaths - - -	26,416	1,512	TOTAL Deaths - - -	30,735	1,540
		÷ 7 =			÷ 15 =
Mean Death-rate - - -	- - -	216	Mean Death-rate - - -	- - -	103

The gain in the latter period, as shown by the difference of the Mean Death-rates, is 113 per million of population, equivalent, on 20,000,000 to an actual diminution of mortality of 2,260 per annum. In the 15 years, 33,900.

ENGLAND AND WALES.

STATEMENT respecting MORTALITY from all Causes among CHILDREN under Five Years of Age during Thirty Years, 1839 to 1868, both inclusive, in *England and Wales*.

VACCINATION, VOLUNTARY.			VACCINATION, COMPULSORY.		
YEAR.	Number of Deaths.	Death-rate per Million of Population.	YEAR.	Number of Deaths.	Death-rate per Million of Population.
1839 - - - -	136,222	8,780	1854 - - - -	178,185	9,639
1840 - - - -	145,320	9,294	1855 - - - -	165,743	8,803
1841 - - - -	133,583	8,388	1856 - - - -	159,067	8,359
1842 - - - -	139,035	8,624	1857 - - - -	174,004	9,038
1843 - - - -	137,623	8,433	1858 - - - -	186,929	9,688
1844 - - - -	140,004	8,477	1859 - - - -	184,264	9,360
1845 - - - -	135,577	8,107	1860 - - - -	166,784	8,380
1846 - - - -	160,620	9,489	1861 - - - -	181,129	9,004
1847 - - - -	158,371	9,245	1862 - - - -	178,513	8,779
1848 - - - -	156,505	9,054	1863 - - - -	202,010	9,827
1849 - - - -	161,100	9,180	1864 - - - -	199,803	9,621
1850 - - - -	144,661	8,143	1865 - - - -	199,843	9,501
1851 - - - -	159,945	8,895	1866 - - - -	203,019	9,573
1852 - - - -	166,114	9,131	1867 - - - -	188,598	8,800
1853 - - - -	165,078	9,000	1868 - - - -	201,329	9,299
TOTAL Deaths - - -	2,239,758	132,240	TOTAL Deaths - - -	2,769,220	137,671
		÷ 15 =			÷ 15 =
Mean Death-rate - - -	- - -	8,816	Mean Death-rate - - -	- - -	9,178

The loss in the latter period, as shown by the difference of the Mean Death-rates, is 362 per million of population, equivalent, on 20,000,000, to an actual increase of mortality of 7,240 per annum. In the 15 years, 108,600.

Appendix, No. 3.

Referred to in Q. 1687.

COMPARATIVE STATEMENT for the Six Years, 1859–1864 inclusive, of DEATHS from SMALL-POX and the Rate per 10,000 of Strength and Population in the British Army (Home Force), the Navy, and the general Male Population between the Ages of Fifteen and Forty-five Years.

YEARS.	ARMY.		NAVY.		General Population.	
	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.
1859 - - -	7	0·97	4	2·1	489	1·12
1860 - - -	9	1·05	12	5·1	415	0·95
1861 - - -	4	0·45	1	0·43	194	0·44
1862 - - -	4	0·51	1	0·48	245	0·57
1863 - - -	6	0·79	2	0·97	925	2·12
1864 - - -	10	1·36	9	4·0	1,249	2·87
Average - - -	—	0·84	—	2·3	—	1·34

The figures in the first two divisions of the above table are taken from Dr. Seaton’s Handbook of Vaccination. The number of deaths in the third division are taken from the Registrar General’s Reports, and the ratio is calculated on the population of males of the ages specified, according to the Census taken on the 8th April 1861, namely, 4,355,655.

Appendix, No. 4.

PAPER handed in by Mr. Fry, 25 April 1871.

Appendix, No. 4.

SUGGESTED AMENDMENTS IN THE VACCINATION ACT, 1867.

1.

After Section 20, a provision to be inserted to the following effect :—

Where any such certificate as aforesaid, either in the said form B. or in the said form C., is given by a public vaccinator, he shall within seven days thereafter transmit a duplicate of such certificate, by post or otherwise, to the guardians of the poor of the union or parish in which he acts as such public vaccinator ;—
And where any such certificate is given by a medical practitioner who is not a public vaccinator, he shall at the same time deliver a duplicate thereof to the parent or other person having the custody of the child, and such parent or other person shall within seven days thereafter transmit such duplicate, by post or otherwise, to the guardians of the union or parish in which he is residing at the time.

2.

In Section 21 the following words to be omitted—

“to the registrar of births and deaths in the district within which the birth was registered, but if such district be not known to him, or if the birth of the child shall not

not have been registered, to the registrar in whose district the operation shall have been performed,"— Appendix, No. 4.

and the following to be substituted in their stead—

"to the guardians of the union or parish in which he acts as such public vaccinator."

3.

Section 23 to be repealed, and the following provision substituted:—

"Where the vaccination is successfully performed by a medical practitioner not being a public vaccinator, he shall deliver to the parent or other person as aforesaid causing the child to be vaccinated, a certificate according to the said form D., duly filled up and signed by him, and also, if requested, a duplicate thereof; and such parent or other person shall within 21 days after the performance of the vaccination transmit such certificate, by post or otherwise, to the guardians of the union or parish in which he is residing at the time."

4.

The following form of certificate to be substituted for the form marked B. in the Schedule to the Act:—

I, the undersigned, hereby certify that I have this day examined
the child of _____ of _____ in the Parish (Township) of _____
in the County of _____ and am of opinion that the said
is in the following state of health (*here state the particulars of the*
condition of the child) and is therefore not in a fit and proper state to be vaccinated;
and I do hereby postpone the vaccination of the said child until the _____ day of _____

Dated this _____ day of _____ 187 .

(signed) A. B.
Public Vaccinator of _____ Union (Parish).
or (signed) A. B., of _____ Medical Practitioner (*i.e.* M.D., L.A.C., or
F.R.C.S., or otherwise, as the case may be).

5.

The following words in Section 24 to be repealed:—

"And also register the certificates transmitted to him as herein provided."

"And another fee of 3 *d.* in respect of every such child whose certificate he shall have registered as herein provided, and he shall receive a fee of 1 *d.* in respect of each child whose certificate he shall have registered without having registered the birth."

And the following words in Section 25 to be repealed:—

"And comparing with the register of successful vaccinations kept by him."

Section 27 to be entirely repealed.

6.

The following enactment to be substituted for Section 27:—

Every registrar at the end of every month [*or* quarter of the year] shall make a copy of the entries in the book containing the minutes of notices of vaccination given by him, and forward such copy to the guardians of the union or parish in which he acts as such registrar; and he shall not be entitled to receive the fees hereinbefore mentioned unless and until he has discharged his duty in this respect;

The guardians of every union or parish shall cause the certificates received by them as hereinbefore provided, to be registered in such manner and form as shall be prescribed by the Poor Law Board; and they shall at the end of every month [*or* quarter of the year] examine the said registers of notices and certificates, and make inquiry into the cases of any children who may not appear to have been vaccinated, and if they find that the provisions of the Act have been neglected, they shall forth with cause proceedings to be taken against the persons in default.

7.

The following clause to be added to Section 28:—

And the guardians of every union or parish shall appoint an officer for that purpose, under the regulations, and subject to the approval of the Poor Law Board.

Appendix, No. 4.

8.

If the foregoing suggestions be adopted, it will be necessary to make some verbal alterations in Section 30, and also in Section 34.

9.

The following addition to be made to Section 33 :—

And the provisions of the Statute of the 2 & 3 Vict., c. 71, s. 44, so far as regards the limitation of time within which proceedings may be taken, shall not apply to proceedings which may be taken against any person under the present Act.

10.

Section 31 to be repealed, and the following enactment substituted in its stead :—

If any Vaccination Officer duly appointed by the guardians of any union or parish shall give information in writing to a Justice of the Peace, that he has reason to believe that any child under the age of 14 years has not been successfully vaccinated, and that he has given notice to the parent or other person having the custody of such child to procure the vaccination of such child, and that this notice has been disregarded, the Justice, if the parent or other person be within his jurisdiction, may summon such parent or other person to appear with the child before him at a certain time and place; and if, upon the appearance before him of the parent or other person, either with or without the child, the Justice shall be satisfied that the child has not been vaccinated, nor has already had the small-pox, he may, if he see fit, make an order, under his hand and seal, directing the parent or other person to procure the vaccination of the child within a certain time; and if at the expiration of that time the child shall not have been successfully vaccinated, or shall not be shown to be then unfit to be vaccinated, or to be insusceptible of vaccination, or to have had the small-pox, the person upon whom such order shall have been made shall be proceeded against summarily; and unless he can show some reasonable ground or excuse for his omission to carry the order into effect, shall be liable to a penalty not exceeding 20 s.; and a similar application may be made to any Justice, and a similar order may be made, in the same case, on repeated occasions, as often as it may be necessary, until the vaccination of the child is effected: Provided always, that if a certificate of the child's unfitness or insusceptibility in regard to vaccination, made by a public vaccinator or medical practitioner, in conformity with the provisions of this Act, be produced to the Justice by the parent or other person, and if the Justice be satisfied that such certificate is authentic and genuine, he shall not then make any order for the vaccination of the child: Provided also, that where any such order is duly made, and not obeyed, if the parent or other person shall declare on oath that he conscientiously objects to the vaccination of the child, believing it likely to be injurious to the child, such objection so declared on oath shall be deemed to be a reasonable excuse for the omission to carry the order into effect; And provided further, that if in any case the Justice shall be of opinion that the parent or other person is improperly brought before him, and shall refuse to make an order for the vaccination of the child, he may order the informant to pay to such parent or other person such sum of money as he shall consider to be a fair compensation for his expenses and loss of time in attending before the Justice.

Danby P. Fry.

Appendix, No. 5.

Appendix, No. 5.

D I A G R A M

SHOWING THE

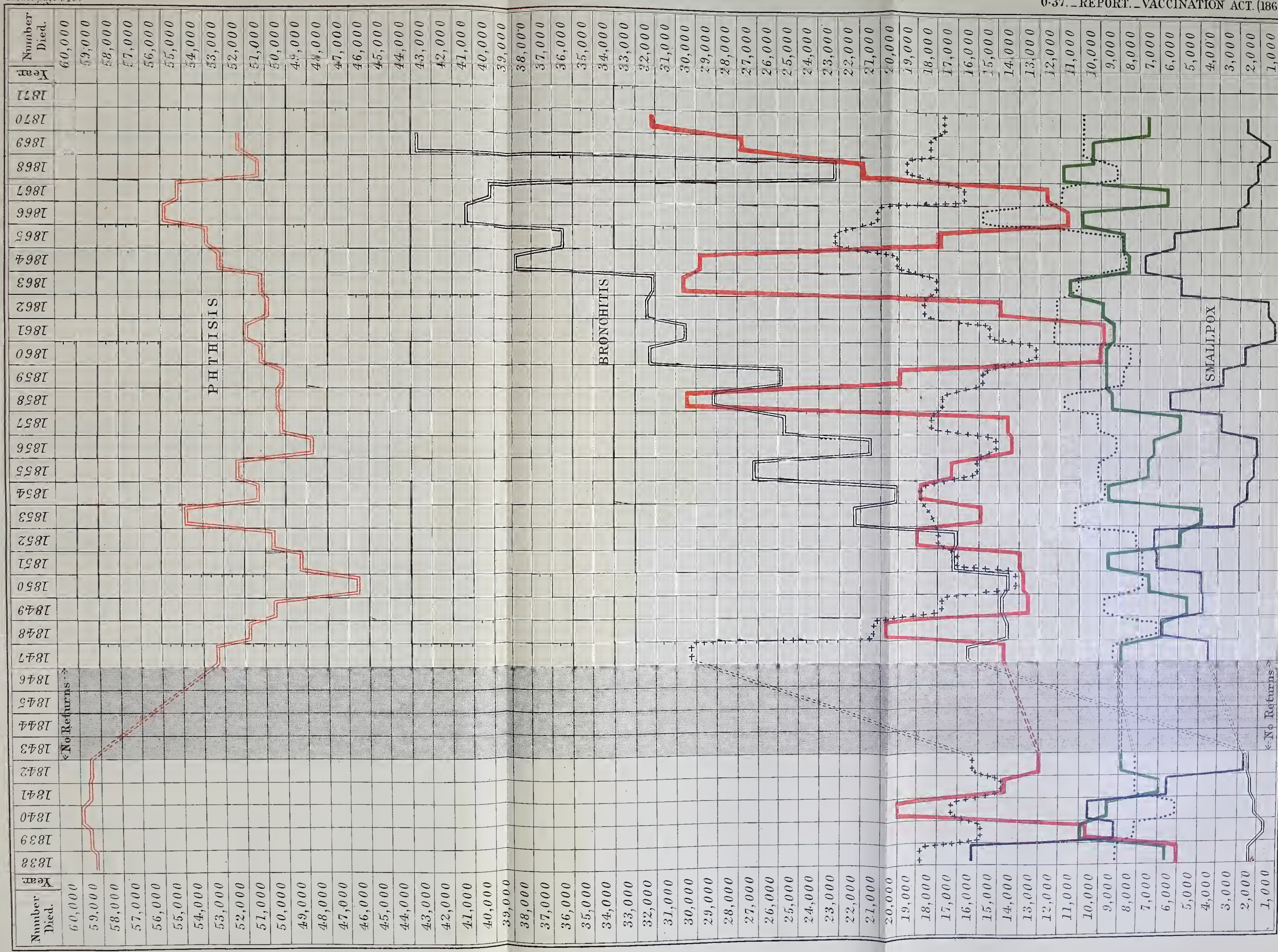
DEATHS IN ENGLAND AND WALES FROM SEVEN CAUSES.

Compiled by Mr. *Charles T. Pearce*, M.D., and referred to in his Evidence.

(*See opposite.*)

DEATHS IN ENGLAND & WALES FROM SEVEN CAUSES.
COMPILED BY CHARLES T. PEARCE,
AND REFERRED TO IN HIS EVIDENCE.

To face page 340.



Phtisis, Double Red line
Bronchitis, Double Black line
Scarlatina, Red line
Measles, Green line
Smallpox, Black line
Typhus, +++++
Whooping Cough,



Appendix, No. 6.

PAPER handed in by Mr. *Simon*, F.R.S., 24th March 1871.

App. No. 6.

— I. —

EXTRACTS from PAPERS prepared in 1857 by Mr. *Simon* (then Medical Officer of the General Board of Health), and at that time laid before Parliament, with reference to the History and Practice of VACCINATION.

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EXTRACTS from PAPERS prepared in 1857 by Mr. *Simon* (then Medical Officer of the General Board of Health) and at that time laid before Parliament with reference to the History and Practice of Vaccination.

I.—SMALL-POX BEFORE THE DISCOVERY OF VACCINATION.

You will not, I trust, think it irrelevant that I begin by referring to the history of small-pox. To the civilised classes of society, it has now almost ceased to be a fatal disease; and among them, accordingly, there is a temptation to forget how their fathers and grandfathers regarded it.* Hence, in the middle of the 19th century, the very success of vaccination may have blinded people to its importance. It is so easy to be bold against an absent danger, to despise the antidote while one has no painful experience of the bane.

Yet, indeed, apart from historical records, our present daily experience of the nature of the disease might almost enable us to construct a description of the course which it has run. To know of it, that it is *fatal to a very large proportion of those whom it attacks*; that it is, *eminently infectious from person to person*; and that it *seizes, with very few exceptions, on all who for the first time come within its range*; this, if one reflects on it, is almost to have read the story of the ravages.

Dangers of natural small-pox.

The details at least may be conjectured. To remote or insular populations, having infrequent and difficult intercourse with the busier masses of mankind, such an infection would come seldom; but, having come, it would find, perhaps, the entire generation prone to receive it. There might have been no previous visitation within living memory. None of the population would have earned exemption by having suffered in a former epidemic. The disease, under such circumstances, must have ravaged more fiercely than the most ruthless of human wars: its effects on mankind must have been comparable to that utter obliteration of vegetable life which ensues when the army of locusts, descending on pastures and vineyards, and sweeping onward with fatal procession, converts into the likeness of a desert what just before was all freshness and fertility.

Different circumstances under which it has prevailed.

Among remote populations.

In every country, probably, its first invasion has been of this kind; and its recurrences, when far apart, have been of equal malignity. Thus it was that in 1518, following European adventure to the Western world, it concurred with fire and sword and famine and blood-hounds to complete the depopulation of St. Domingo;† thus, that soon afterwards, in Mexico, it even surpassed the cruelties of conquest, suddenly smiting down 3½ millions of population and leaving none to bury them;‡ thus that in Brazil, in the year 1563, it extirpated whole races of men; thus, that about the same period, in the single province of Quito (according to De la Condamine) it destroyed upwards of 100,000 Indians. And thus, too it has been in later days that Siberia and Kamschatka§ have been ravaged; thus, that again and again, till very recent times, the same dreadful pestilence has depopulated Greenland and Iceland.|| Before the terror of its presence, communities literally dissolved themselves;

* There were two words which Prince Kaunitz would not allow to be uttered in his presence: "Death" was one, "Small-pox" was the other.

† "Variolarum morbilli eis ignoti hactenus . . . qui tanquam morbosas pecudes contagioso halitu eos invaserunt." (Pet. Mart. Angler. de Orbe Novo. decad. iv. c. 10.) Not six and-twenty-years had passed since the island (then containing a million of Indians) had been discovered by Columbus, who received from the inhabitants an amount of kindness and hospitality which touched him to the heart, and whose language, in describing them, gives singular pathos to the thought of their then impending misery and extinction.—Comp. Helps's "Spanish Conquest in America," I. 124.

‡ "No habia quien los enterrasse" are words which Mr. Prescott quotes from Sahagun's History. Mr. P. also ("Conquest of Mexico," v. 6) describes this terrible epidemic as "sweeping over the land like fire over the prairies, smiting down prince and peasant . . . leaving its path strewn with the dead bodies of the natives, who (in the strong language of a contemporary) perished in heaps like cattle stricken with the murrain." Dr. Stricker (Oppenheim's Zeitschr. vol. xxxiv.) gives information about several later epidemics in Mexico. He states that in 1779 its ravages were dreadful; that it then occasioned in the capital alone nearly 9,000 deaths out of nearly 39,000 attacks; and that in 1797 again it caused in the city 4,451 deaths out of 24,516 attacks. With these records he contrasts what has happened since the introduction of vaccination; that in 1829-30, when small-pox was most severely epidemic, vaccination was almost always protective; and that in 1830-31 there died in New Leon 1,740 persons, without a single vaccinated person contracting the infection.

§ Pallas (Reisen, St. Petersburg, 1770), makes mention more than once of the small-pox in Siberia; and in reference especially to the Ostjaks (vol. iii. p. 50) describes it as the chief obstacle to an increase of their population.

|| Captain Cook (Voyage to the Pacific Ocean, Lond. 1785, p. 365) speaks of the small-pox at its first appearance (1767) in Kamschatka as "marking its progress with ravages not less dreadful than the plague, and seeming to threaten "their entire extirpation."

¶ A subjoined official communication from Denmark (App. p. 73) gives interesting particulars of various visitations which have befallen Iceland and Greenland. As late as 1734, Greenland suffered its first epidemic of small-pox, when nearly two-thirds of the inhabitants were swept away. In Iceland the disease had been known from much earlier times; but in its eighteenth visitation (1707) it is said to have destroyed 18,000 persons out of a population of about 50,000. In Crantz's History of Greenland (London, 1767, i. 335-7 may be read terrible details of the epidemic just adverted to: "Empty depopulated houses and unburied corpses, some within and some without the houses," are described; and "in one island they "found only one girl with the small-pox upon her, and her three little brothers; the father, having first "buried all the people in the place, had laid himself and his smallest sick child in a grave raised with

Appendix, No. 6. selves;* and the well-known description of the plague at Athens does not convey more dreadful images of human suffering than may be gathered from the writings of those travellers† who, even to the latest times, have witnessed the power of natural small-pox against remote unprotected populations.

In civilised countries.

While such was small-pox in the less travelled parts of the world, it seems certain that in civilised Europe, with its constant intercourse of towns and countries, the disease was at least as deadly. Its strength, indeed, was differently distributed. Not as in Greenland, twice or thrice in a century, but incessantly, that fatal sickle was in motion, and the harvest counted from day to day. Instead of coming after long absence on masses of population entirely unprotected against the infection, it recurred in each place so frequently that, for the most part, at any given moment, a more or less considerable majority of the inhabitants would have faced the danger before. They would have obtained against its attacks that protective

“stone, and ordered the girl to cover him.” Sir George Mackenzie (*Travels in Iceland*, Edin. 1811, p. 409) referring to small-pox in Iceland, says, “its ravages have been such as to render this disease important even in the political history of the island.”

* It is said (*Ring, Treatise on Cow-pox*, p. 994) that after such a dispersion the capital of Tibet once remained for three years without inhabitants. The same author (p. 604) describes that about the end of last century a tribe of Esquimaux on the Labrador coast was put to flight by the outbreaking of small-pox, and did not venture to return for three years; when their country had “become a desert without a living soul in it,” but they found the skeletons of 500 persons who had fallen victims to that horrible disease.” Incidents of this kind may be found abundantly mentioned by travellers to whom I have referred, and Dr. Mead (*Works*, p. 311) describes the Hottentots on a particular occasion as drawing lines of defence against any communication with the sick, and shooting all who attempted to pass.

† Striking accounts of its ravages among the North American Indians, in very recent times, may be gathered from Catlin’s “*Letters and Notes on the Manners, Customs, and Condition of the North American Indians*,” (Lond. 1841) as especially at vol. i. pp. 6, 80, 99, 213; vol. ii. pp. 24-5, 43-4, 161, 238, 255; and App. A. At the first-mentioned of these passages, Mr. Catlin observes, “Thirty millions of white men are now scuffling for the goods and luxuries of life over the bones and ashes of twelve millions of red men, six millions of whom have fallen victims to the small-pox, and the remainder to the sword, the bayonet, or whiskey.” And in another place (ii. 255) he adds, “I would venture the assertion, from books that I have searched and from other evidence, that of the numerous tribes which have already disappeared, and of those that have been traded with, quite to the Rocky Mountains, each one has had this exotic disease in their turn, and in a few months have lost one-half or more of their numbers.” Washington Irving’s “*Astoria*” also makes mention of recent dreadful outbreaks, in which “almost entire tribes” have been destroyed. It may not be superfluous to quote from a third source some details which both confirm and illustrate the above. Mr. Lloyd, the translator of Prince Maximilian’s *Travels in the interior of North America*, quotes in the preface to his work the following description of an epidemic of small-pox which befel the Indians 20 years ago, adding that the general correctness of the details had been confirmed to him by several travellers who had subsequently visited those nations: “The disease first broke out about the 15th of June, 1837, in the village of Mandans, a few miles below the American fort Leavenworth, from which it spread in all directions with unexampled fury. The character of the disease was as appalling as the rapidity of the propagation. Among the remotest tribes of the Assiniboina from 50 to 100 died daily. The patient, when first seized, complains of dreadful pains in the head and back, and in a few hours he is dead; the body immediately turns black, and swells to thrice its natural size. In vain were hospitals fitted up in Fort Union, and the whole stock of medicines exhausted. For many weeks together our workmen did nothing but collect the dead bodies and bury them in large pits; but since the ground is frozen we are obliged to throw them into the river. The ravages of the disorder were the most frightful among the Mandans where it first broke out. That once powerful tribe which, by accumulated disasters, had already been reduced to 1,500 souls, was exterminated, with the exception of 30 persons. Their neighbours, the Big-bellied Indians and the Ricorees, were out on a hunting excursion at the time of the breaking out of the disorder, so that it did not reach them till a month later; yet half the tribe was already destroyed on the 1st of October and the disease continued to spread. Very few of those who were attacked recovered their health; but when they saw all their relations buried, and the pestilence still raging with unabated fury among the remainder of their countrymen, life became a burden to them, and they put an end to their wretched existence, either with their knives and muskets, or by precipitating themselves from the summit of the rock near their settlement. The prairie all around is a vast field of death, covered with unburied corpses, and spreading for miles pestilence and infection. The Big-bellied Indians and the Ricorees, lately amounting to 4,000 souls, were reduced to less than the half. The Assiniboina, 9,000 in number, roaming over a hunting territory to the north of the Missouri as far as the trading posts of the Hudson’s Bay Company, are, in the literal sense of the expression, nearly exterminated. They, as well as the Crows and Blackfeet, endeavoured to fly in all directions, but the disease everywhere pursued them. At last every feeling of mutual compassion and tenderness seems to have disappeared. Every one avoided the others. Women and children wandered about the prairie seeking for a scanty subsistence. The accounts of the situation of the Blackfeet are awful. The inmates of above 1,000 of their tents are already swept away. They are the bravest and most crafty of all the Indians, dangerous and implacable to their enemies, but faithful and kind to their friends. But very lately we apprehended that a terrible war with them was at hand, and that they would unite the whole of their remaining strength against the whites. Every day brought accounts of new armaments, and of a loudly-expressed spirit of vengeance towards the whites, but the small-pox cast them down, the brave as well as the feeble, and those who were once seized by this infection never recovered. It is affirmed that several bands of warriors who were on their march to attack the fort, all perished by the way, so that not one survived to convey the intelligence to their tribe. Thus, in the course of a few weeks, their strength and their courage were broken, and nothing was to be heard but the frightful wailings of death in their camp. Every thought of war was dispelled, and the few that are left are as humble as famished dogs. No language can picture the scene of desolation which the country presents. In whatever direction we go, we see nothing but melancholy wrecks of human life. The tents are still standing on every hill, but no rising smoke announces the presence of human beings, and no sounds but the croaking of the raven and the howling of the wolf interrupt the fearful silence. The above accounts do not complete the terrible intelligence we receive. There is scarcely a doubt that the pestilence will spread to the tribes in and beyond the Rocky Mountains, as well as to the Indians in the direction of Santa Fé and Mexico. It seems to be irrevocably written in the book of fate, that the race of red men shall be wholly extirpated in the land in which they ruled, the undisputed masters, till the rapacity of the whites brought to their shores the murderous firearms, the enervating ardent spirits, and the all-destructive pestilence of the small-pox. According to the most recent accounts, the number of Indians who have been swept away by the small-pox, on the western frontier of the United States, amounts to more than 60,000.”

protective exemption which was generally the good fortune of survivors. But it is a moderate computation, that for every five persons thus, at the price of much past suffering, almost secured against the disease, one at least must have died. The annual ravages of small-pox in Europe* alone, have been estimated at half-a-million of lives. M. De la Condamine† reckoned that in France a tenth of the deaths were by small-pox; Rosen's estimate of Sweden was to the same effect. For our English experience, there exists only imperfect records; but it seems that, within the London Bills of Mortality, small-pox, when not at its worst, averaged a fourteenth‡ of the annual total of deaths; a fourteenth, too, at times when that total, as compared with the population, represented, perhaps, double our present death-rate.

For a popular notion of the disease, it may be enough to cite what it did in royal families.§ Illustrated in royal families. In the circle of William the Third, for instance: his father and mother died of it, and, not least, his wife; and his uncle, the Duke of Gloucester; and his cousins, the eldest son and the youngest daughter of James the Second; and he himself (like his friend Bentinck) had suffered from it most severely, barely surviving, with a constitution damaged for life.¶ Or again, in the Court of Austria: "Joseph the First (says Vehse) was carried off, when "not more than 33 years of age, by the small-pox; to which in the course of the "eighteenth century, besides him, two empresses, six archdukes and archduchesses, an "elector of Saxony, and the last Elector of Bavaria, fell victims." To this list might have been added, no doubt, many other names; among them, for instance, a dauphin (1711) and a king (1774) of France, a queen (1741) of Sweden, and an emperor (1727) of Russia.

It would be thought an awful epidemic now-a-days, that should strike like this in high places.

Yet the ravages of small-pox are not half enumerated in the list of the myriads whom it killed. From the earliest to the latest medical records of the disease, there is constant mention of the tax which it levied upon survivors.¶ Among those who outlive it (says De la Condamine) many either totally or partly lose their sight or hearing; many are left consumptive, weakly, sickly, or maimed; many are disfigured for life by horrid scars, and become shocking objects to those who approach them. Another learned writer of the same period, after describing these frequent sequels of the disease, says that its very nature is one *quæ nullâ furcâ sese expelli, patitur, sed usque recurrit*.** Sir Gilbert Blane†† at a later period quoted a report of the Hospital for the Indigent Blind, to the effect that two-thirds of those who applied there for relief had lost their sight by small-pox.

Worst of all were these ill effects in persons already of feeble, especially of scrofulous, constitutions. Nothing (says Dr. Gregory) develops that tendency more certainly than protracted small-pox.‡‡

It

* Dimsdale, who went to St. Petersburg to inoculate the Empress Catherine, talks (Tracts, St. Petersburg, p. 119) loosely, and probably with exaggeration, of *two millions* as the annual mortality of the Russian Empire from small-pox; and he mentions that on one occasion, going in search of virus to a village where small-pox had been prevailing, he found that of 37 patients all but two had died. Clarke (Travels) speaks of the small-pox mortality of China as "incalculable." Maitland, the first English inoculator, says of natural small-pox in the Levant that in some years it is "a kind of plague that sweeps away at least a third "of those who are seized with it." And Holwell (Account of Manner of Inoculating for the Small-pox in the East Indies, London, 1767, p. 4) gave the following description of its ravages in Bengal: "Every "seventh year, with scarcely any exception, the small-pox rages epidemically in these provinces during the "months of March, April, and May, and sometimes until the annual returning rains about the middle of "June put a stop to its fury. On these periodical returns (to four of which I have been a witness) the "disease proves universally of the most malignant confluent kind, from which few, either of the natives or "Europeans, escaped that took the distemper in the natural way, commonly dying on the first, second, or "third day of the eruption. . . . The usual resource of the Europeans is to fly from the settlements "before the return of the small-pox season."

† Mémoire sur l'Inoculation de la Petite Vérole, 1754; or English edition (with additions from the author) by Dr. Maty, 1755. De la Condamine estimated that small-pox "destroys, maims, or disfigures the "fourth part of mankind." Williams (Elements of Medicine, I., p. 202) quotes the French Minister of the Interior as estimating (Report on Vacc., 1811) the former annual mortality by small-pox to have been 150,000 persons. Others (comp. Ring, op. cit. 700) state it at a very much smaller though still enormous amount.

‡ See Dr. Jurin's "Letter containing a Comparison between the Mortality of the natural Small-pox and that given by Inoculation," Lond. 1723. His estimate is formed on the Bills of Mortality of the 42 years 1667-86 and 1701-22; the intermediate years 1637-1790 being left out, because in them measles and small-pox were not distinguished.

§ Extensive fatality of any particular disease in single families can of course rarely be known, except where the house is of historical importance; but the same sort of thing must have been frequent in all classes of society. In one of Horace Walpole's Letters (2nd April 1750) we read: "Lord Dalkeith is dead of the "small-pox in three days. It is so dreadfully fatal in his family, that, besides several uncles and aunts, his "eldest boy died of it last year, and his only brother, who was ill but two days, putrefied so fast that his limbs "fell off as they lifted the body into the coffin."

¶ Burnet (Hist. William and Mary, p. 304) says of him: "He was always asthmatical, and the dregs "of the small-pox falling on his lungs, he had a constant deep cough."

¶ De la Condamine, op. cit. p. 57. "As sequelæ of small-pox, Dr. Willan enumerates glandular swellings, "ulcers (often gangrenous) about the thighs, scrotum, and knees, puffy tumours of the soft parts, enlargement of the bones, stiffness of the joints, ophthalmia, deafness, cough, dyspnoea, diarrhoea, anasarca, hydrothorax."—Williams, loc. cit.

** Tralles, de Insitione Variolarum, 1765, p. 159, who begins his account by saying: "Ab illo ævo quo "innotuere variolæ ad hunc diem myriades exemplorum prostiterè, tristium vestigiorumque in corpore "humano omnibusque ejus partibus illæ post se reliquerunt."

†† Medico-Chirurg. Transact., vol. x., p. 326. Dr. Gregory also writes, that a large proportion of the blind have been found to owe their misfortune to the secondary fever of small-pox.

‡‡ "Accordingly, in scrofulous constitutions we see secondary fever complicated with strumous ophthalmia, "characterised . . . by obstinate resistance to every kind of remedial treatment. Irritable ulcers

Appendix, No 6.

Habitual fears of the disease.

Commencement of 18th century.

Inoculation of small-pox.

Introduction of the practice in England.

It is scarcely needful to say of the disease I have described that it was among all civilised nations a constant source of terror. Each time that the contagion was re-introduced to a place, all who had not been touched in previous visitations (including especially such children as had been born in the interval) might expect to become subjects of attack. Accident in individual cases might delay this dangerous moment, but for nearly all it was only delay.* Of persons not prematurely cut off by other diseases, in the long run very few escaped this infection.† Seventy years of age were no security; and for such as were disposed to triumph at the end of an epidemic which had spared them, there was often quoted the old saw, *Nemo ante obitum beatus*. Thus, at every rumour of the disease, men might tremble for the valuable lives of others ‡ or for their own; and that horror of the living patient, which so loathsome an infliction occasioned, became, when death had ended his sufferings, a very panic towards his corpse.§

Perhaps at no previous moment of English history had the horror of small-pox been greater or more fully justified than at the beginning of the last century.

And now for the first time there came to us a story that we could, so to speak, make terms with this loathsome and murderous enemy; that, by receiving it of our own accord, we could disarm it; that we could (as it was expressed) "buy the small-pox" cheap; that the susceptibility to contract its fatal infection could be exhausted by artificial means, giving indeed the disease, but giving it so mildly, that life was almost unendangered in the process.

This indeed was substantially the fact; and to the present time it remains one of the most interesting and least explained facts in pathology, that the specific contagion or ferment of small-pox, so uncontrollable in its operations, when it enters a man in the ordinary way of his breathing an infected atmosphere, becomes for the most part disarmed of its virulence, when it is artificially introduced to the system through a puncture of the skin; so that a person exposed to this artificial infection very generally contracts the disease in its mildest and most tractable form.||

This practice, subsequently known in England as inoculation for the small-pox, seems to have been followed for ages in the East. Not only, it is said, had the Chinese since the sixth century been accustomed to procure, by special means of their own, an artificial infection of the disease; but the Brahmins from remote antiquity had practised the very operation which was now to be discussed in England. In Persia, Armenia, and Georgia, it is stated also to have been in vogue, and to have spread as a popular custom, not only about the shores of the Mediterranean, but even to those of the Baltic, to Scotland, and still less accountably to Wales. It was not thus, however, that the discovery first became notorious in England, but in the years 1714-16 communications on the subject were published in London by members of the medical profession who had witnessed in Constantinople and Smyrna the great success of the practice; and in 1717 Lady Mary Wortley Montague's well-known letter (xxx.) from Adrianople effectually awakened the public curiosity. Yet by her example, even more convincingly than by her pen, did Lady Mary introduce the knowledge of inoculation; for while still resident in Turkey she showed her faith in it by submitting

"form under the lower eyelid, and around the knee, ankle, and elbow joints, and are found very difficult to heal. Glandular enlargements of the neck take place which sometimes suppurate, but oftener continue indolent and of stony hardness. Children frequently suffer from otitis." Gregory, *op. cit.* p. 741. "On parle de quelques individus scrofuleux dont l'état s'est amélioré sensiblement à la suite de la variole; mais nous avons rarement eu l'occasion de vérifier ce fait à l'Hôpital des Enfants. Une circonstance qui nous a, au contraire, frappé, c'est que les affections scrofuleuses graves et la phthisie pulmonaire reçoivent ordinairement de la variole une impression défavorable: presque toujours alors leur marche est accélérée, et leur terminaison funeste suit de près."—Guersant et Blache, *Dict. de Méd.*, art. *Variole*. See also to the same effect, Rayer, *Maladies de la Peau*, tome i., p. 522; and Lugol, *sur les Causes des Maladies Scrofuleuses*, p. 220. It deserves notice that Jenner, in his first publications, laid great stress on these, then notorious, after-effects of small-pox.

* Mr. Cross, in his account of the variolous epidemic in Norwich (p. 15), says: "In several instances I have met with severe small-pox in adults who had at various times, both in Norwich and in London, resisted the intimate and continued exposure to the contagion of that disease, and who supposed, with some appearance of reason, that they should for ever be free from it." And he subjoins the following anecdote, derived from one of the Suttons, who are mentioned in it: "A man who believed himself to have had the small-pox lived for twelve years as nurse in the establishment for the reception of inoculated patients which the Suttons had near Norwich, continually waiting upon the patients who were undergoing the disease; and at the end of that time he caught the small-pox, of which he died."

† "All mankind, with few exceptions, are susceptible of the variolous poison at some period of their lives. . . . A few persons pass through a long life apparently insensible to or insusceptible of the small-pox virus. It is a curious and important circumstance, that, so far as is yet known, such constitutions exhibit a like inaptitude to receive and nourish the vaccine disease."—Gregory, in *Cyclop. Pract. Medicine*, iii. 744.

‡ *E. g.* "The small-pox raged this winter (1694-95) about London, some thousands dying of them, which gave us great apprehension with regard to the Queen, for she had never had them. In conclusion she was taken ill. . . ."—Burnet's *Hist. William and Mary*, p. 136.

§ Witness Saint Simon's account of the Grand Dauphin's death: "La Vallière fut le seul des courtisans qui, ne l'ayant point abandonné pendant sa vie, ne l'abandonna point après sa mort. Il eut peine à trouver quelqu'un pour aller chercher des Capucins pour venir prier Dieu auprès du corps." Or Besenval's description how, on a different occasion, when Louis XV. had been huddled into his coffin, "quelques prêtres, dans la chapelle ardente, furent les seules victimes condamnées à ne pas abandonner les restes d'un roi qui" &c.

|| Moore's *Hist. of Small-pox*, p. 218 et seq.; also communications by Tymoni and Pylarini in the *Philosoph. Transactions*, Nos. 339 and 347; also Kennedy's *Essay on External Remedies*, 1715; and Maitland's *Account of Inoculating the Small-pox*, 1722. In Kennedy's work, p. 157, mention is made of "some parts of the Highlands of Scotland, where they infect their children by rubbing them with a kindly poek, as they term it;" and the attractive estimate given of such inoculated small-pox is, that "it need be no more minded than as in giving or taking the itch."

submitting her son to the operation; and four years afterwards, having meanwhile returned to London, she had the first demonstration of the Eastern practice made here, almost publicly, on her daughter. The result being most satisfactory, others were soon encouraged to repeat the experiment; and in 1722 (after a preliminary experiment on seven condemned criminals) the critical course was taken of inoculating two children of the Royal family.

From this time the inoculation of small-pox possessed a recognised though not an uncontested place in medical practice.

Not uncontested, for innumerable absurd objections were raised, which much interfered with its general adoption. It was said to be wicked and irreligious, and to savour strongly of magic, to promote vice and immorality, and to be an inspiration of the devil.* It was said to instil a vicious humour without establishing an issue for its discharge; still worse, to be the means of introducing syphilitic and other infections into the body, and of exciting scrofula and consumption. Inoculating surgeons (it was urged) ought to be cut off, as poisoners, from the professional community.

Objections raised
against its use.

Besides all this nonsense, there were objections, exaggerated but not unfounded, against a practice which sometimes occasioned death to the subject of the operation. It could not be denied that the worst possible forms of small-pox did sometimes, though rarely, ensue on this proceeding. Thus, in the first eight years there were inoculated in England only 845 persons, of whom 17 had died; and in Boston, United States, there had been an equal amount of failure among the earlier experiments. It might not unreasonably be urged that this was a large risk to incur in the pursuit of a somewhat uncertain good; for, said the objectors, there is no absolute security given by it against subsequent attacks of small-pox.† But as improvements were progressively made in the methods of managing inoculated persons, the dangers from the operation greatly diminished; and Mr. Moore probably over-estimates the deaths which would follow the operation under the most favourable circumstances when he says that "after the last improvement in treatment had been established, probably not more than one in 200 were lost."‡

The advantages of this alternative, as compared with that of encountering the risks of natural small-pox, were well set before the public by Dr. Jurin and Dr. Mead in England, by M. De la Condamine in France, and by others. The superstitions and prejudices respecting the practice were contended against by many able impartial persons. In 1746 an hospital was established for inoculating the poor, and for receiving them when affected with small-pox; and in 1754 the Royal College of Physicians of London pronounced its authoritative sanction of what was now no longer a speculative novelty.§

Its advantages.

Many difficulties remained. "Inoculation," says Mr. Moore, "had become a very serious affair; for the preparatory treatment lasted commonly a month, and medical attendance was requisite for five or six weeks longer; and, though occasional disasters were palliated, they could not be wholly concealed. Families in moderate circumstance and timid mothers were not therefore very easily induced to incur the expense and risk of such a process. Consequently, the practice of inoculation, though widely diffused, was in a great measure confined to the opulent. . . . It appeared from a calculation made by Professor Monro in 1765, that between five and six thousand persons had been inoculated in the whole of Scotland in thirty-one years, . . . and the fatal cases amounted to one in seventy-eight. Nothing, therefore, could be more vain than the expectations of those who imagined that such a system could be universally adopted."

Its disadvantages.

Yet, subsequently, as improvements were made, under which its adoption implied far less cost of time, convenience, money, and life; and as the public became aware of these improvements, great impulse was given to the progress of inoculation; and this progress, as regards the masses of society, was made at least more rapid, if not more sure, by the competition of quacks, who promised for it a hundredfold what it could perform.

But now at length it was that people began to see, in its full force, the one real and almost insuperable objection to variolous inoculation. For the inoculated themselves it was indeed

Its tendency to diffuse
the infection of small-
pox, and to cause an
increased mortality.

* See Massey's Sermon against the dangerous and sinful Practice of Inoculation, Lond. 1722, where, *inter alia*, it is written: "Let the atheist and the scoffer, the heathen and the unbeliever . . . inoculate and be inoculated." This author regards natural small-pox as an useful check on "the increase of vice and immorality," and thinks men have good reason to be grateful for it as among "the wholesome severities ordained for offenders." Among the numerous objections subsequently raised against inoculation in France, especially by Monsieur Hecquet, it was urged that it came from Turkey, and had been well received in a Protestant country.

† It is remarkable that, at the moment of introducing inoculation to England, this objection was mentioned as one which had currency in the East. Kennedy (*op. cit.* p. 155) says: "The greatest objection commonly proposed is, whether or not it hinders the patient from being infected a second time." He adds, that in such cases of re-infection the second attack is "rarely or never in the same manner, or the same fulness of malignity . . . it generally proves to be that commonly called the bastard or hog-pox, which is empty or skinny, and very little matter or malignity contained in it."

‡ History of Small-pox, p. 302. De la Condamine says (p. 20) that "out of 6,393 persons inoculated in England, but 17 are suspected to have died of the consequences of the operation, which is only one in 376." Dr. Maty, the learned friend and translator of Condamine, remarks on this passage: "I can't help thinking M. la Condamine's proportion full large, and I am inclined, after a mature examination of all the facts that are come to my knowledge, to reduce it to that of one in a hundred." Among 5,964 individuals inoculated at the Small-pox Hospital in the years 1797-99, there were only nine deaths (Watson *ii.*, 773). Gregory, *loc. cit.*, p. 749, says: "The average number of deaths at the Inoculation Hospital was only three in a thousand." The National Vaccine Board (*see* Reports 1825 and 1837) speaks decidedly of "one in 300" as the proportion of the inoculated that "will surely die" from the operation.

§ "Argumenta quæ contra hanc variolæ inserendi consuetudinem in principio afferebantur, experientiam repellisse . . . camque humano generi valde salutarem esse se existimare."—Taylor, *Orat. Harv.*, 1855.

Appendix, No. 6.

indeed an immense gain. By passing through the artificial disorder, they apparently became as safe against any recurrence of the infection as if they had suffered from it in the natural way; and they attained this result at a fiftieth part of the risk which would have attended the natural disease. They had no reason to complain.

But, meanwhile, what was the state of the remaining millions of the population of England? A principal point of improvement in the treatment of the inoculated was, wherever their strength allowed, to send them abroad into the open air; and, as small-pox in its inoculated variety was not less infectious than in its natural form, the result may be imagined. Especially in the metropolis it could be observed; for here, under the influence of those doctrines which (so far as concerned the primary patients alone) made the chief improvements in treatment, inoculated persons were allowed to become incessant sources of general contagion. Even the Governors of the Small-pox Hospital (says Mr. Moore) broke through their original prudent regulations; * whoever applied at their gates were inoculated, and suffered to wander through the City of London covered with pustules and exhaling infectious vapour. The consequences of this system were, at the end of the century, admirably reviewed by Dr. Heberden, in a section of his well-known work; † and as this book is one of simple medical research, written with no controversial object, it will be well to consider his estimate of the case.

Dr. Heberden's estimate of this evil.

"The inoculation of the small-pox having been first used in England since the beginning of the eighteenth century, and having been now for many years generally adopted by all the middle and higher orders of society, it becomes an interesting inquiry to observe, from a review of the last hundred years, what have been the effects of so great an innovation upon the mortality occasioned by that disease. But however beneficial inoculation prove to individuals, or indeed to the nation at large, the Bills of Mortality incontestably show that in London more persons have died of the small-pox since the introduction of that practice. The poor, who have little care of preserving their lives beyond the getting their daily bread, make a very large part of mankind. Their prejudices are strong, and not easily overcome by reason. Hence, while the inoculation of the wealthy keeps up a perpetual source of infection, many others, who either cannot afford or do not choose to adopt the same method, are continually exposed to the distemper. And the danger is still increased by the inconsiderate manner in which it has lately been the custom to send into the open air persons in every stage of the disease, without any regard to the safety of their neighbours. It is by these means that, while inoculation may justly be esteemed one of the greatest improvements ever introduced into the medical art, it occasions many to fall a sacrifice to what has obtained the distinction of the *natural* disease. This must always be an objection against making any great city the place for inoculation, until the practice is become universal amongst all ranks of people. Out of every thousand deaths in the Bills of Mortality, the number attributed to the small-pox during the first 30 years of the eighteenth century, before inoculation could yet have had any effect upon them, amounted to 74. During an equal number of years at the end of the century, they amounted to 95. So that, as far as we are enabled to judge from hence, they would appear to have increased in a proportion of above five to four."

This objection almost insuperable.

Of the objections thus suggested to variolous inoculation (of the objections to it, at least, as a system for general adoption) I have ventured to say that they were almost insuperable. In theory, at first sight, it might seem otherwise. *If* all persons would but adopt that method, no one could suffer from another: the inoculated might then wander freely in fields and streets, or sit in theatres and omnibuses, finding no un-inoculated whom they could poison. But that *if* covers unattainable contingencies.

Putting aside for the moment all question of the strong and stupid prejudices against inoculation which still operated on multitudes of people; putting aside, also, the immoveable apathy and indifference of still larger numbers whom nothing will ever incite to precautions which look three days forward; putting aside, further, the reasonable fears entertained of an expedient under which two, or three, or four, or five, or ten in every thousand subjects were sure to die; and starting with an imaginary population neither prejudiced, nor apathetic, nor timorous, the inoculators themselves demurred against universal inoculation. ‡ There were conditions of age and conditions of health, under which, even by them, it was thought unsafe to operate. Thus, even assuming an unanimous willingness of the world to adopt inoculation, there must inevitably remain against it this twofold objection: (1) that it would destroy a certain, though small, proportion of those submitted to its performance; and (2) that to the very considerable number of persons, temporarily or permanently ineligible for the operation, it would occasion a greatly increased danger of contracting the natural disease.

State of the case sixty years ago.

And in practice (as may be inferred from Dr. Heberden's remarks) this objection was more fatal than in theory. Inoculation, despite its advantages to individual life, was becoming a serious evil to society. An admirable, and till then unrivalled, invention, it could only be worked at an intolerable cost of life. §

The

* The Small-pox Hospital (says Dr. Williams, p. 199) was much too small to effect its object, since it could only receive 15 persons at a time.

† On the Increase and Decrease of different Diseases, and particularly of the Plague. By Wm. Heberden, junr. 1801.

‡ See Dimsdale's Present Method of Inoculating for the Small-pox, 1779, pp. 9, 12, 13, 21; also De la Condamine, op. cit. pp. 17, 18, 45; also Mead, who implies the same sort of thing when he argues (op. cit. p. 344) that "the venom is communicated to a young, healthy, and, for the age, strong body."

§ From the commencement of inoculation this objection had been made to it on theoretical grounds, but

The historian of small-pox, looking back from this point of view on the labours which during twelve centuries had been made to mitigate its ravages, comes to a mournful conclusion on their value:—"The confession that must be made is mortifying to a professional man, for, according to such records as we possess, it appears that in spite of all medical exertion, the mortality of small-pox has progressively augmented. It has been made evident by calculations from the Bills of Mortality of the City of London, renowned for medical science, that at the beginning of the eighteenth century about one-fourteenth of the inhabitants died of the small-pox, and during the last thirty years of that century, when the practice in small-pox was highly improved, the mortality of this disease had augmented to one-tenth. . . . But this immense and increasing consumption of human lives was not the sole evil produced by this distemper; for a considerable portion of the survivors were pitted and disfigured; some lost one of their eyes, a few became totally blind, and others had their constitution impaired, and predisposed to a variety of complaints, which were productive of future distress, and sometimes death. These additional calamities cannot be reduced to calculation; but as the mortality from small-pox was continually on the increase, these concomitant evils must have been so likewise."†

Against the substantial justice of this painful criticism, so far as I am aware, no objection can be raised. Medicine baffled and helpless! For after times—for millions of our race—the continued raging of that pitiless plague! A drearier picture could scarcely have saddened mankind.

That this despair was not lasting is due to the genius of an English surgeon; and the close of the eighteenth century, which had much to darken it, will be remembered till the end of human history for the greatest physical good ever yet given by science to the world.

II.—THE EARLY HISTORY OF VACCINATION.

AMONG the dairy-folks of Gloucestershire there was a curious tradition, that a certain pustular eruption occasionally observed on the teats of cows, and supposed to be engendered in them by contagion from the grease of horses, might extend its infection to the human subject; and that persons who had suffered from this *cow-pox*, as it was called, were by it rendered insusceptible of small-pox.

Words to this effect were once spoken in the hearing of EDWARD JENNER, then a village doctor's apprentice in the neighbourhood of Bristol. They were never afterwards absent from his mind. Thirty years elapsed before their fruit was borne to the public; but incessantly he thought, and watched, and experimented on the subject; and the work in which at length he recorded the incomparable results of his labour may well have commanded the confidence of reflecting persons.

Little would ever be heard of objections to vaccination, if all who undertake the responsibility of its performance, and all who feel disposed to resist its adoption, would but thoroughly study that masterpiece of medical induction, and imitate the patience and caution and modesty with which Jenner laid the foundations of every statement he advanced.

In the first *Inquiry into the Causes and Effects of the Variolæ Vaccinæ* (1798) Jenner set on a scientific basis the popular belief to which I have referred. He cited in detail many instances of persons who, having at earlier periods of life accidentally contracted an infection from cows or horses, had afterwards shown themselves insusceptible of human small-pox;—instances where the protective contagion had reached the hands of milk-women, stable-boys, and the like; where, for twenty, thirty, even fifty years afterwards, its consequences had survived; where the system, even at these distances of time, remained absolutely proof against all attempts to infect it with small-pox, either by inoculation or by the breathing of an infected atmosphere. He further showed by experiment (Case 19) that persons desirous of acquiring this protective influence needed not wait for some accidental infection; they could imitate the manœuvre of small-pox inoculation, and on any occasion when the cattle of the neighbourhood might be suffering, could let the vaccine infection be surgically transferred to themselves from the cow.

If this had been the limit of Jenner's discovery he would, indeed, have made an interesting contribution to pathological science. For the popular belief which first excited his mind was by no means generally or firmly established, even in the counties where it originated. There were plenty of alleged instances, where cow-pox had failed to afford the imputed protection. The subject was obscured by many sources of fallacy; and nothing less than elaborate and skilful inquiry could have effected the important demonstration.

Appendix, No. 6.

Mr. Moore's estimate of the success of medicine against small-pox down to the end of the 18th century.

Popular tradition on the efficacy of accidental cow-pox.

JENNER.

His first publication.

The protective influence of cow-pox established;

and its inoculability from the cow.

Necessity for this demonstration.

Up

had confused itself with the less reasonable arguments of that period. In France its validity had been recognised; and after a severe epidemic small-pox which prevailed in Paris in 1763, and was ascribed to an increased infection from the practice of inoculation, this practice was prohibited in the capital, so that (says Mr. Moore) "those who wished to be inoculated were under the necessity of retiring to the country, where they might reap the advantage of this operation, without destroying their neighbours." See also De la Condamine, *op. cit.*

† Moore's History of Small-pox, p. 299.

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Partial anticipations
of Jenner's practice.

Up to this limit, however, his merits—though very great and original—were not exclusive. No one else, indeed, had come to the subject with the insight of genius; no one else had surmised what immense human interests were involved in that gossip of cow-houses; no one else had seen through the fallacies which made it contradictory and incredible. Still the tradition which had so moved him was not special to his own neighbourhood. Common (as afterwards appeared) to sundry cow-keeping districts, it had floated past many other ears than Jenner's, and as early as 1769 had been paragraphed in a Göttingen newspaper. In parts of Holstein, too, the protective influence of cow-pox had been so thoroughly recognised that, on more than one occasion, its infection had been artificially conveyed to the human subject; and especially Plett, a village schoolmaster, near Kiel, had thus in 1791 inoculated from the cow three children who, three years afterwards, when small-pox prevailed severely in their family, were found to be proof against infection.*

Propagability of cow-
pox from person to
person.

But this was not the limit of Jenner's achievement. Happily for mankind, his thoughts had from the first stretched further forward in the subject; and it was his transcendent merit to show how that apparently local privilege of the Gloucestershire cowherds might be diffused for the blessing of nations.

For when (in March 1780) he first disclosed to an intimate friend the magnitude of what was in his mind, and communicated the theory he had formed on the protective influence of vaccine lymph, he "declared his full and perfect confidence that it might be continued in perpetuity by inoculation from one human being to another in the same way that the small-pox was."

And now, in his first publication, he announced what, for practical purposes, may be regarded as the fulfilment of that prediction. In a succession of cases he had conducted the lymph to a fifth generation from its source; and the child vaccinated last in the series had been proved, by the test of variolous inoculation, to be no less safe against small-pox than another to whom had been given a first infection from the cow.

Setting aside for the present the question whether this transmission of the vaccine influence from person to person can really and practically be "continued in perpetuity," it may be sufficient to observe, that (1) its transmissibility through at least many successive human bodies, and (2) that large multiplication of lymph which, by the production of new vesicles, occurs at each stage of such transmission, were established fully and solely by Jenner's researches. These are the all-important conditions, under which alone the discovered virtues of cow-pox could be useful for public protection.

Sources of fallacy
to be guarded
against.

Jenner had now detailed twenty-three cases in which, by vaccination, accidental or experimental, the human system had been rendered, for periods ranging up to 53 years, insusceptible of small-pox inoculation. He had reasonably accounted to himself for the so-called exceptions in the great pathological law which his cases illustrate; exceptions only in appearance; but which had precluded that law from early and general recognition. He had learned that not every eruption on the cow is the specific cow-pox; and that—even from cow-pox—not all inoculation is protective. The disease might be mistaken, or the lymph be spoilt. He had cautioned persons who would repeat his experiments against these sources of fallacy, "lest the want of discrimination should occasion an idea of security which might prove delusive."

VACCINATION.

Its first performance
in London.†

Barring such sources of fallacy, he asserted "that the cow-pox protects the human constitution from the infection of small-pox;" and that, by an appropriate procedure—henceforth to be named VACCINATION—this protective influence may be indefinitely communicated and multiplied among mankind.

These conclusions were at once accepted, as proven or probable, by persons of judgment and authority in the medical profession. Mr. Cline, then the great teacher of surgery at St. Thomas's Hospital, was, at Jenner's request, the first to verify them by experiment; and early in 1799 Dr. Woodville, of the Small-pox Hospital, with the co-operation of Mr. Pearson, commenced a great series of public vaccinations in London.

Universal corrobor-
ation of Jenner's
statements.

In these early days of the discovery, almost every case of vaccination was made a test of the alleged protection. Dr. Jenner, writing in 1801, says, "upwards of 6,000 persons "have now been inoculated with the virus of cow-pox, and the far greater part of them have "since been inoculated with that of small-pox, and exposed to its infection in every rational "way that could be devised, without effect;" and Dr. Woodville (giving public evidence in 1802) said that within two years (1799–1801) there were vaccinated at the Small-pox Hospital 7,500 persons, of whom about one-half were subsequently inoculated with small-pox matter, and in none of them did small-pox produce any effect. Other observers, too, had contributed numerous instances of persons who, having accidentally contracted infection from the cow, were found, many years afterwards, capable of resisting all attempts to infect them by inoculation of small-pox.

These

* I borrow this statement from an interesting Lecture by Prof. Hasse, entitled "*Die Menschenblattern und die Kuhpockenimpfung*," Leipzig, 1852. He refers to Choulant's *Life of Jenner* as his authority, a work which at this moment I am unable to consult. In Mr. Cline's note-book referred to below (next foot-note), I find an entry, apparently made in 1780, that "some inquiries and experiments ought to be made "relative to the cow-pox."

† Both in Rose's *Biographical Dictionary* (art. Jenner) and in Gregory's *Lectures on the Eruptive Fevers* (p. 187), I read that the first verification of Jenner's discovery was made in *St. Thomas's Hospital*. Neither in Mr. Cline's private case-book, in which that first vaccination is described, nor in Jenner's notice of the experiment (op. cit. p. 128), can I find any mention of the *place* where it was performed; and the name of the patient (Richard Weller) is not to be found in the Hospital books of the period.

Appendix, No. 6.

Conclusiveness of these facts ;

under certain qualifications.

Scientific meaning of cow-pox.

Recent researches ;
their results,

and authors.

These facts told their own story, and they tell it still. They were in themselves sufficient argument ; for Jenner's simple truthful style carried conviction. No one candidly studying them (in the first publication and in its supplements of the next two years) could, even at that time, reasonably doubt that, *subject to certain qualifications*, there was now given to society an almost absolute power to control the ravages of small-pox.

Subject, I say, to certain qualifications ; for it was not yet proved or tested that infants vaccinated by Jenner's process would permanently enjoy the same complete protection which he had shown to exist in persons who at riper age had contracted accidental cow-pox by their own manipulation of infected cattle ; neither was it beyond question whether perhaps the vaccine influence might become progressively though slowly enfeebled by an indefinite length of human transmission. Time, and long time alone, would decide whether these would be over-fastidious doubts ; but if, indeed, Jenner did undervalue their remote interest (almost invisible clouds, as they were, in the distance) it may, at least, be said that envy and malice have found no other weakness in his case.

It was not till forty years afterwards that science supplied an authentic interpretation of Jenner's wonderful discovery. He, indeed, had suspected the solution, and had hinted his meaning when he called cow-pox by the name of *variola vaccinae* :—for such, in fact, it is—the *small-pox of the cow*. It had been an old medical observation that cattle often suffered in the same epidemic with men ; certain of their diseases had already (especially by Dr. Layard, in the Philosophical Transactions for 1780) been compared to the human small-pox ; and Jenner (says his biographer) “always considered small-pox and cow-pox as “modifications of the same distemper, so that in employing vaccine lymph we only make “use of means to impregnate the constitution with the disease in its mildest, instead of “propagating it in its virulent and contagious form, as is done when small-pox is inoculated.”* Researches subsequent to Jenner's, and extending to within the last twenty years, have settled this part of the question.† It has been made matter of almost familiar experiment that the infection of small-pox may, by inoculation, be communicated from man to the cow ; that its result is an eruption of vesicles presenting the physical characters of cow-pox ; that the lymph from these vesicles, if implanted in the skin of the human subject, produces the ordinary local phenomena of vaccination ; that the person so vaccinated diffuses no atmospheric infection ; that the lymph generated by him may be transferred, with reproductive powers, to other unprotected persons ; and that, on the conclusion of this artificial disorder, neither renewed vaccination, nor inoculation with small-pox, nor the closest contract and cohabitation with small-pox patients, will occasion him to betray any remnant of susceptibility to infection.

The merit of first putting on record these important facts does not belong to England. As early as 1801, Dr. Gassner of Günsburg—after ten unsuccessful trials of small-pox inoculation on cows—had at last succeeded in infecting one ; and, with matter taken from the resulting vesicles of this animal had inoculated four children, who thereupon had developed the ordinary phenomena of vaccination, furnishing vesicles from the lymph of which seventeen other children had been similarly infected. Dr. Gassner's discovery remained for forty years almost entirely unknown or unbeliev'd ; but at length Dr. Thiele, of Kasan, repeated the experiment with equal success, and rendered it still more complete by supplying a necessary test of the nature of the process. He showed, namely, that the lymph engendered in these experiments possessed, not only the local infectiousness, but likewise the protective powers of cow-pox ; that persons recently inoculated with it might with impunity be let sleep in one bed with small-pox patients, or be inoculated with small-pox virus ; that, in short, it was true, protective vaccination which they had undergone. The result of these investigations was not published before the beginning of 1839 ;‡ at which

* Much interesting historical information on these points is compiled by Dr. Baron in his fifth chapter, vol. i., p. 162.

† See Heim (who gives an account of Gassner's inquiry and of the local circumstances which nearly deprived him of credit in the matter) in Henke's Zeitschr., Ergänzungsheft xxx, p. 57 ; Thiele, loc. infra cit. ; Ceely, in Transactions of the Provincial Medical and Surgical Association, vol. viii ; Badcock, Detail of Experiments proving the Identity of Cow-pox and Small-pox ; Brighton, 1845 ; also Boston (U.S.) Daily Advertiser, 14 April 1852, where it is stated that Dr. Adams, of Waltham, and Dr. Putnam, of Boston, by a successful repetition of Mr. Ceely's experiments, have been able to “furnish the city and neighbourhood with all the “vaccine matter used there since that period ;” further, with respect to a different and probably less successful method of variolating the cow, Sunderland, in Hufeland's Journal, 1830. In the above quoted volume of the Trans. Provinc. Med.-Surg. Ass. (p. 24) Dr. McMichael is referred to as having in 1828 informed the College of Physicians that in Egypt, on occasion of a failure in the ordinary supply of vaccine lymph, the variolous inoculation of cows was successfully practised, and “fine active vaccine virus produced.”

‡ Dr. Thiele's paper is published in the first part, for 1839, of Henke's Zeitschrift für die Staatsarzneikunde, with an editorial note, dated December 1838. At that time the vaccine contagion, which he had originated by small-pox inoculation of the cow, had passed through 75 successive human descents, and had been used for vaccinating more than 3,000 persons. I transcribe the paragraph in which Dr. Thiele states his conclusions ; and I add to it a further remarkable passage in which he describes what he believed to be effectual means—independent of the cow—for *artificially reducing small-pox virus* to a state in which its inoculation would produce on the human subject only the ordinary effects of vaccination :—

“1. Die sogenannte Vaccine ist nicht eine den Kühen eigenthümliche, sondern durch Uebertragung der “Menschenpocken bei ihnen hervorgebrachte Krankheit ; und der Mensch und nicht die Kuh, wie man “bisher geglaubt, ist die Quelle der Vaccine.

“2. Diese so gebildete Krankheit kann durch unmittelbare Uebertragung von Kühen auf Menschen “übergehen, bringt in ihnen eine identische leichte, vor den natürlichen Blattern schützende, Krankheit “hervor.

“3. Durch ein absichtliches methodisches Modificiren und Depotenziren, kann man auch ohne Das- “wischenkunft der Kuh, Schutzblattern hervorbringen.

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which time other experiments of the same kind, independent and equally conclusive, were being conducted in this country by Mr. Ceely, of Aylesbury; of whom I am glad to repeat the praise expressed by a high authority, that he "has done more to advance the natural history of vaccination than any other individual since the days of Jenner." Soon afterwards, and also by independent experiments, Mr. Badcock, a long-established druggist at Brighton, arrived at the same conclusion as to the origin of cow-pox: and from 1840 to the present time he has constantly been applying his knowledge to its important practical purpose; having within this period again and again derived fresh stocks of vaccine lymph from cows artificially infected by him; having vaccinated with such lymph more than 14,000 persons; and having furnished supplies of it to more than 400 medical practitioners.

Theoretical interest
of these observations.

These researches are mentioned out of their chronological order, because they set in so very clear a light the meaning of Jenner's practice. A host of theoretical objections to vaccination might have been met, or indeed anticipated, if it could have been affirmed sixty years ago as it can be affirmed now:—"This new process of preventing small-pox is really only carrying people through small-pox in a modified form. The vaccinated are safe against small-pox, because they in fact have had it. Their safety is of the same sort as if they had been inoculated under the old process, or had been infected by the natural disease. The trifling disorder which they suffer—these few tender vesicles on the arm, this slight feverishness that they show—is small-pox of the most mitigated kind; small-pox so modified by the intermediate animal organisation through which it has passed, that, when thus re-introduced to the human body, it excites but insignificant disturbance, and no general exhalation of infective material."

The subject of vaccination first brought before Parliament.

Returning now to the early history of vaccination, we find that early in 1802 the subject was formally brought under cognizance of the Legislature. By this date Dr. Jenner's "correspondence had become so extensive as to occupy almost all his time, and to make him a most laborious servant of the public for their great and exclusive benefit, whilst there was nothing of advantage left to himself but the consciousness that he was so employed; and, under these circumstances, it was thought that the magnitude of his discovery and the very disinterested manner in which he was sacrificing his time and his property in diffusing its blessings, were fit subjects for the consideration of the British Parliament."* On presentation of a petition to this effect, Mr. Addington, then Prime Minister, informed the House of Commons that he had taken the King's pleasure thereon, who strongly recommended it to the consideration of Parliament.

First Parliamentary Committee.

The Committee to which the petition was referred, "after examining a number of witnesses of the highest character and most extensive experience in the profession," reported in full corroboration of all that Jenner had alleged.

Subjoined to this letter is the evidence (App. A.) which Jenner gave before that Committee, and likewise (App. B.) the Committee's Report.†

Its Reports.

Admiral Berkeley, the Chairman of the Committee, in the speech with which he introduced the Report, made a statement which greatly added to its significance. "In the investigation of a matter so important to mankind in general, it was not thought right by the Committee to confine their examination to the petitioner's evidence alone, as is usually the case, but to sift out any case which could make against it. This conduct, which certainly may appear to bear hard on the petitioner, has proved a matter of fresh triumph to him; for although we descended to sift out information from every anonymous letter—though we raked the very kennels for information against this practice—all that we were enabled to get is pointed out at full length in the Report; and such were the explanations on those very cases, such were the testimonies against that evidence, that if Dr. Jenner's discovery could receive additional lustre from this sort of inquiry, it certainly has done so. Upon the beneficial effects of this discovery, I hardly wish to trouble the Committee (of Supply) as I am certain, if the Report which contains the scientific opinion of the first medical men in this country, does not satisfy the House, the united opinion of all the world, the homage of Europe which has been paid to the discoverer of this blessing, will have its due weight on the minds of his countrymen."

First Jennerian Institution.

The verdict was not without its effect. At the close of this year, steps were taken with unprecedented strength of public support, to found, by voluntary contributions, a society "for

"4. Diese Schutzblätter hat alle bekannte Eigenschaften der Vaccine, nur im einem zum Wohle der Menschheit höheren Grade.

"5. Die vorstehenden, bis jetzt erlangten Resultate berechtigen zu der Hoffnung, dass man zur Milderung der epidemisch-contagiösen Krankheiten ein den Schutzblättern ähnliches Mittel wird finden können.

"* Die Reduction der Menschenpocke zur Vaccine anlangend, so muss die Lymphe aus Menschenpocken erst 10 Tage zwischen mit Wachs verklebten Gläsern liegen, und dann mit warmer Kuhmilch verdünnt, gleich der gewöhnlichen Vaccine geimpft werden; diese Impfung bildet an den geimpften Stellen grosse Pocken, das die gewöhnliche Impfung begleitende einmalige Fieber zeigt sich zweimal, zum erstenmale gegen den 3ten bis 4ten, das zweitemal, und zwar heftiger, zwischen dem 11ten und 14ten Tage, die peripherische Röthe ist stärker, und nicht blos an der geimpften Stelle, sondern auch neben derselben entstehen zuweilen, jedoch immer nur ganz kleine Pocken; die Narbe ist grösser und tiefer wie gewöhnlich, die Ränder derselben zuweilen scharf. Zehn Generationen hindurch muss diess Verfahren beobachtet werden, wodurch die Pocke nach und nach ganz der Vaccine gleichkömmt; wenn das consecutive Fieber ausbleibt, dann kann man Impfungen von Arm zu Arm ohne Verdünnung der Lymphe mit Kuhmilch vornehmen."

* Baron's Life of Jenner, p. 480.

† The Evidence at large, as laid before the House of Commons, respecting Dr. Jenner's Discovery of Vaccine Inoculation, together with the Debate which followed, and some Observations on the contravening evidence, &c.; by the Rev. G. C. Jenner, 1805.

"for the extermination of small-pox;" and on the 3rd of February 1803, the great discoverer took his seat for the first time as President of the Royal Jennerian Institution. This society, "fostered by the most exalted patronage, and adorned by all the learning and talent of the medical profession of the metropolis," took a very important part in diffusing the first advantages of vaccination. "Thirteen stations were opened in different parts of the metropolis. In eighteen months they were enabled to announce that 12,288 inoculations had taken place, and during the same space of time 19,352 charges of vaccine virus were supplied from the central house to most parts of the British Empire, and to foreign countries. . . . This society was also in correspondence with other institutions, and its medical council investigated with care and fidelity such cases of small-pox as were alleged to have occurred after vaccination."

It would have been claiming too much from reason, to expect that this progress could be made without opposition. Eighty years earlier the use of variolous inoculation, a thing of immemorial practice in eastern countries, could not be imported here by those who had witnessed its operation on thousands, without its introduction exciting theoretical (as well as rightly founded practical) objections. How much less, then, could Jenner find an easy reception for his method! It appealed to no national experience. It based itself only on some rustic traditions, and on his few thoughtful observations.

Great allowance must indeed be made for those who then hesitated to accept this wonderful novelty. The very magnitude of the promised boon almost justified mistrust. And, to persons ignorant of the Gloucestershire experience, that good should accrue from such a source was a strange supposition. Fears were more suggested than hopes.* What could be expected from "a bestial humour" but new and dreadful diseases? Who could see the limit of its "consequences," physical or moral? What security was there against "horns" growing on the vaccinated? What "ideas might arise in the course of time from a brutal fever having excited its incongruous impressions" on the brain? Who knew but that "the human character might undergo strange mutations from quadrupedan sympathy, and some modern Pasiphæe rival the fables of old?"

While these physiological conjectures were gravely pressed upon the public, religion and morality were not less misargued to the same effect.† Leviticus was quoted, with dark insinuations against "contaminating the form of the Creator with the brute creation." Small-pox being a "merciful provision on the part of Providence to lessen the burden of a poor man's family," was it not "impious and profane to wrest out of the hands of the Almighty these divine dispensations?" What could ensue, on so daring a measure of attempted prevention, but some unimagined punishment?

Reply to these various scruples (where they were sincere) was no difficult matter. Those who feared mysterious bodily changes were answered from the collection of observed facts and experiments; were assured that, in Berkeley, neither horns had grown nor Minotaurs been begotten. To the others, superstitious mistrusters of good, it seemed enough to say that, in this beneficent economy of the world, antidotes are ever scattered side by side with poisons; that not exclusively the latter are of divine gift; that man's duty concurs with his instinct and privilege, to struggle against physical as against moral evil.

Up to a certain point, the weaker side in a controversy is apt to grow noisier with defeat. In proportion as Jenner's merit became recognised by Parliament and the public, those who had committed themselves to opposition became more and more vehement against his matchless discovery. All that had been predicted was now, they said, in fulfilment. The nation, unconsciously, was dying of vaccination. Terrible portents were described.‡ A child at Peckham had its former natural disposition absolutely changed to the brutal, so that it ran upon all fours like a beast, bellowing like a cow, and butting with its head like a bull! Sarah Burley's face was distorted, and began to resemble that of an ox! Master Joules, similarly degenerating, became the ox-faced boy, a proverb and a frontispiece! A lady's daughter coughed like a cow, and had grown hairy all over her body! William Ince, too, had grown patches of hair not resembling his own, but of the same colour, length, and quality as that of a cow! Many had suffered like him! Some also squinted as only oxen can squint! Others had lost their nails and the ends of their fingers! Eruptions, ulcers, mange,

Early prejudices against vaccination; compared with former prejudices against inoculation of small-pox.

Prognostics,

and denunciations,

and inventions.

* See especially "Treatise on Lues Bovilla, or Cow-pox," (3 editions); "Commentaries on Lues Bovilla or Cow-pox," (3 editions); and "Cow-pox Epistle to Rowland Hill," (7 editions), all by B. Moseley, M.D., Member of the Royal College of Physicians of London, and of the University of Leyden; likewise other works mentioned below.

† "Cow-pox Inoculation no Security against the Small-pox Infection," by W. Rowley, M.D., Member of the University of Oxford, and of the Roy. Coll. Physicians; "Serious reasons for uniformly objecting to the Practice of Vaccination," by John Birch, Surgeon to St. Thomas's Hospital. Over Mr. Birch's remains, within one of the City churches (Rood Lane), a monument erected by his sister commemorates, that "the Practice of Cow-poxing, which first became general in his day, Undaunted by the overwhelming influence of power and prejudice, And the voice of Nations, He uniformly and until Death (1815) perseveringly opposed."

‡ "Dissertation on the Failure and Mischief of Cow-pox," and "Cow-pox exploded," both by G. Lipscomb, Surgeon; "Observations on the Pernicious Consequences of Cow-pox Inoculation," (3 editions) by R. Squirrell, M.D. The last-named author certainly did his utmost to produce the results which he predicted. Not content with being struck "with such horror and diversion that he could not as a man of honour or feeling submit to or coincide with vaccination," he recommended those who had already undergone the operation immediately to submit themselves to a course of treatment to "eradicate every particle of the cow-pox virus out of the blood." His treatment was mercury. The consequences may be imagined. See also (contra) "Letters to Dr. Rowley on his late Pamphlet" (with a frontispiece) by Aculeus; "The Vaccine Contest," by William Blair; and "Treatise on Cow-pox," by John Ring.

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mange, abscesses, scabs and blotches, glandular tumours and diseased joints and decaying bones, fevers and blindness, and gangrene and convulsions, were multiplying among the victims of Jenner! Deaths, of course, were plentiful. And on what but vaccination could they depend? It was the old story again:—

Post ignem æthereâ domo
Subductum, macies et nova febrium
Terris incubuit cohors;
Semotique prius tarda necessitas,
Lethi corripuit gradum.

Facts.

Such was the experience of the opposition. Divested of its more ludicrous imaginations, and some allowance being made for an occasional unskilfulness of those who pretended to vaccinate, all resolves itself into the one not uncommon error, of confounding what is fact with what is opinion or inference. A child coughed: to the ears of the vaccinophobist, the sound was as of a cow; to his intellect, it was the effect of vaccination. A child was ugly or squinting, or it had those skin eruptions which have always been frequent incidents of infancy: at once, to the alarmist, there was *vultus taurinus* or *tinea bovilla*. In a word, the oldest and most familiar diseases were thus re-named, in conformity with a belief that vaccination was causing them; while, in reality, there was no more reason in this belief than if vaccination had been charged with occasioning infants to cut their teeth, or with leading boys to prefer cricket to Cornelius Nepos.

Last appeals.

As the chances of the opposition became less hopeful, so did their language grow worse and their arguments more wild.* Placards and caricatures were resorted to. Tender points were aimed at. Were persons about to marry, might not vaccination injure their fortune in life? Might there not be a disclosure of shocking facts? And was nothing due to patriotism? Evil and Buonaparte (1807) and vaccination are allowed to triumph for a time, perhaps as the scourge and punishment of our sins; but shall we submit because they have for a while been prosperous? No! Britons never, never, &c.!

Present interest in this obsolete literature.

You will find it difficult to believe that the very oldest of this nonsense, which I have transcribed, was written in England within 60 years of the present time. By us, for half a century, it has been forgotten, or only recalled as an echo by occasional last words from the continent, where, far off, there is seen sometimes a feeble wave still rippling from that old flood of ours. It is wearisome work to read stuff so stupid or so dishonest. But I have ventured to trouble you with it, as with some other parts of this narrative, in order that it may plainly be seen how little of suddenness or surprise there was in the first social successes of vaccination; how everything possible and impossible was affirmed against it; how all weaknesses and prejudices were appealed to; how every inch of progress was contested; and how little it can be said that Jenner stole a march on the public mind. Further (because there is nothing new under the sun, and the wheel of time brings back the follies of the past oftener than its wisdom) it may become necessary, in case these doctrines should emerge again from obscurity, to refer to their right authors the praises of original invention, and to remember that 50 years ago such objections were examined, and refuted and condemned.

Public doubts.

For, when those outcries were raised, the public naturally hesitated, and asked for explanation. Moseley and Squirrell and Rowley and Birch and Lipscombe, and even Stuart were, no less than Jenner, members of the medical profession. To the uninitiated, it was Doctor against Doctor.

Report of Royal Jennerian Institution.

Under these circumstances two inquiries were successively instituted. First in 1805, "the Medical Council of the (then) Royal Jennerian Institution having been informed that various cases had occurred which excited prejudices against vaccine inoculation, and tended to check the progress of that important discovery in the kingdom, appointed a committee of 25 of their members to inquire into the nature and truth of such cases." The Report, in which the Council recorded the result of this inquiry, contains much which is as applicable to the present occasion as to the circumstances of that time. I therefore subjoin it (App. C.) for your consideration, begging merely to observe, that among the members of this council and committee were not only surgeons and physicians of the largest practice and highest character in London, but especially some whom the profession of that day would have selected as the most competent persons in England to pronounce

* Rowley, op. cit.; also F. Smyth Stuart's "Letter on the Subject of Coercive Vaccination," and "£. 30,000 for the Cow-pox." To this author's fancy, vaccination was "a mighty and horrible monster with the horns of a bull, the hind hoofs of a horse, the jaws of the kraken, the teeth and claws of a tyger, the tail of a cow, all the evils of Pandora's box in his belly; plague, pestilence, leprosy, purple blotches, foetid ulcers, and filthy running sores covering his body, and an atmosphere of accumulated disease, pain and death around him, which had made his appearance in the world and was devouring mankind—especially poor helpless infants, not by scores only or hundreds or thousands, but by hundreds of thousands." The author assists his description by an engraved caricature:—Dr. Jenner and other ministers of vaccination (distinguished from ordinary practitioners of medicine by the addition of cowtails and horns) are discharging large hampers of children into the mouth of the monster; while another (apparently Dr. Thornton) officiates behind with a spade, and shovels into a nightman's cart the undigested remains of this diet. From the distance are advancing to the rescue, Drs. Moseley, Squirrel, and Rowley, with Messrs. Birch and Lipscombe, "the men, the heroes," to whom also an obelisk is erected in the right background. Perhaps it may have been in this unattractive guise that vaccination was first introduced to Philadelphia, where (see Baron's Life of Jenner, vol. i., p. 442) "the leading physician pronounces it too beastly and indelicate for polished society."

pronounce on the questions at issue. You will observe that minute inquiry was made, not only into allegations then current against the protective powers of vaccination, but also into "opinions and assertions which charged the cow-pox with rendering patients liable to particular diseases;" and that the council, after having detailed the results of this inquiry, "cannot conclude their report upon a subject so highly important and interesting to all classes of the community, without making this *solemn Declaration* :—

"That in their opinion, founded on their own individual experience, and the information which they have been able to collect from others, mankind have already derived great and incalculable benefit from the discovery of vaccination; and it is their full belief, that the sanguine expectations of advantage, and security, which have been formed from the inoculation of the cow-pox will be ultimately and completely fulfilled."

The second inquiry was even more critical. The then Chancellor of the Exchequer, (now Lord Lansdowne), asked the attention of the House of Commons (2nd July 1806) to a subject of general importance . . . totally unconnected, indeed, with all party principles . . . but concerning the welfare, health, and existence of a large portion of his Majesty's subjects, and therefore well deserving of the consideration and support of Parliament; . . . that very remarkable discovery . . . a substitute for the loathsome small-pox, an evil which has spread a dreadful desolation throughout the whole world. He stated to the House facts, derived from the experience of vaccination in (alas!) other countries than England, illustrative of those advantages to society which we were neglecting to realise. He expressed a profound regret, that in this country alone, in which the discovery had originated, the salutary practice of vaccine inoculation had been undergoing a retrograde movement. He referred to the objections and to the manner in which they had been promulgated; to prejudices which had been excited, and to their fatal effect in bringing back nearly that average degree of depopulation which had been experienced previous to the introduction of the vaccine discovery. He had not the smallest inclination to propose any compulsory measures, . . . but felt it a duty incumbent on him . . . to submit a plan by which the House should become possessed of a mass of evidence as to the real merits of this discovery; . . . a procedure which would tend to enlighten the public, by informing them in a formal and regular manner of what appeared to be the truth, . . . and would give this valuable discovery the advantage of having all the weight of promulgation which the high character and popularity of Parliament is capable of. He concluded by moving that an humble address be presented to his Majesty, praying that he will be graciously pleased to direct his Royal College of Physicians to inquire into the state of the vaccine inoculation in the United Kingdom, and to report their opinion as to the progress which it has made, and the causes which have retarded its general adoption." Mr. Wilberforce (from the other side of the House) and Mr. Windham (then Secretary of State), with others, spoke at length and with great earnestness, in the same general sense as Lord Henry Petty; so the motion passed *nem. con.*

Discussion in Parliament.

Nine months passed before the College of Physicians (April 1807) made its Report:—
"Deeply impressed with the importance of an inquiry which equally involves the lives of individuals and the public prosperity, they had made every exertion to investigate the subject fully and impartially. In aid of the knowledge and experience of the members of their own body, they had applied separately to each of the Licentiates of the College; they had corresponded with the College of Physicians of Dublin and Edinburgh; with the College of Surgeons of London, Edinburgh, and Dublin; they had called upon the Societies established for Vaccination for an account of their practice, to what extent it had been carried on, and what had been the result of their experience; and they had, by public notice, invited individuals to contribute whatever information they had severally collected."

Report of Royal College of Physicians.

An inquiry of this nature and extent, conducted under a sufficient sense of responsibility by the first medical corporation of the kingdom, could not fail to deserve public confidence. Nearly every passage in the Report applies to the present juncture, as well as to the purpose for which it was written; and I subjoin the whole of it (Appendix D.) as recording by far the most important investigation to which Jenner's discovery has been submitted in the country of its birth. Having already quoted the words with which the Report opens, I will here also repeat the remarkable paragraphs which close it:—

"The College of Physicians feel it their duty strongly to recommend the practice of vaccination. They have been led to this conclusion by no preconceived opinion, but by the most unbiassed judgment, formed from an irresistible weight of evidence which has been laid before them. For, when the number, the respectability, the disinterestedness, and the extensive experience of its advocates is compared with the feeble and imperfect testimonies of its few opposers; and when it is considered that many, who were once adverse to vaccination, have been convinced by further trials, and are now to be ranked among its warmest supporters, the truth seems to be established as firmly as the nature of such a question admits; so that the College of Physicians conceive that the public may reasonably look forward with some degree of hope to the time when all opposition shall cease, and the general concurrence of mankind shall at length be able to put an end to the ravages at least, if not to the existence, of the small-pox."

With this Report terminates, for all practical purposes, the early history of vaccination in England. The result was of course brought (29 July 1807) under notice of the House of Commons; and again, in such a debate as is seldom given to matters of concord, the foremost Members of the House honoured themselves by honouring the great benefactor

The discussion exhausted.

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General assent of the medical profession.

Individual exceptions.

of mankind. Henceforth the public mind was apparently quite satisfied on the subject,* and from this period, I repeat, begins to date the almost universal vaccination of children of the educated classes in this country.

The general assent of the Medical Profession dated from an earlier period, and soon became all but unanimous. An infinitely small amount of *bonâ fide* dissent probably continued; in reference to which I will only observe, that allowance must be made for two sorts of personal influence which tended, and perhaps still tend, to occasion it.

Even now, among the living contemporaries of Jenner's discovery, there must be men whose fathers and friends and teachers of fifty years back denounced the new practice. Among such as remember the warmth of that contest, perhaps not all discriminate the error. The old allegiance of studentship binds, possibly, here and there a surviving follower of Birch. An hereditary admirer of small-pox inoculation, he may remember only its advantages as compared with the evils of natural small-pox; may forget the fatal objections to its general employment, and may still hesitate to replace that practice of his youth by the "speculative novelty" of vaccination.

Also to a very small extent allowance must be made for personal eccentricities, which, in respect of vaccination, as of every other subject, have ever caused solitary voices to be raised against the common convictions of mankind. This influence can scarcely cease to operate. Occasionally, no doubt, till the end of time, there will be found some lover of paradox, ready, in mere wantonness of authorship, to choose his text from Squirrel or Rowley, and to write dispraise of Jenner, as Cardan wrote encomiums on Nero.

Subject only to these qualifications, it may be said, as regards England, that the convictions of the medical profession on this important matter were fixed fifty years ago. Even then, probably, they would have been expressed with the same sort of unanimity as prevails among the professors of any other department of knowledge, in respect of their most familiar and elementary teaching.

Whether my present inquiry has brought to light any subsequent divergence of opinion, is a question on which the evidence is before you, and to which I shall presently return.

III.—SMALL-POX SINCE THE USE OF VACCINATION.

Evidence on the protectiveness of vaccination must now be statistical.

IN the earlier days of Jenner's discovery the evidence which led men to adopt vaccination depended on a somewhat minute inquiry into individual cases. In thousands of instances (as I have already mentioned) the patient, after being vaccinated, was deliberately tested by inoculation with small-pox matter; in other instances, chance supplied equivalent means of trial; and the results of these very numerous experiments were sufficiently uniform to convince the public judgment.

At present it may be reasonably claimed that the evidence shall be of a more comprehensive kind. From individual cases the appeal is to masses of national experience. Tested by half a century's trial on the millions of civilized Europe, what has vaccination achieved? Comparing the small-pox mortality of the last forty or fifty years with that of as many years in the last century, do we find a sensible difference? Has progress been made towards that final result which (App. A.) Jenner anticipated, the annihilation of the most dreadful scourge of the human species?

Foreign information obtained by the Epidemiological Society.

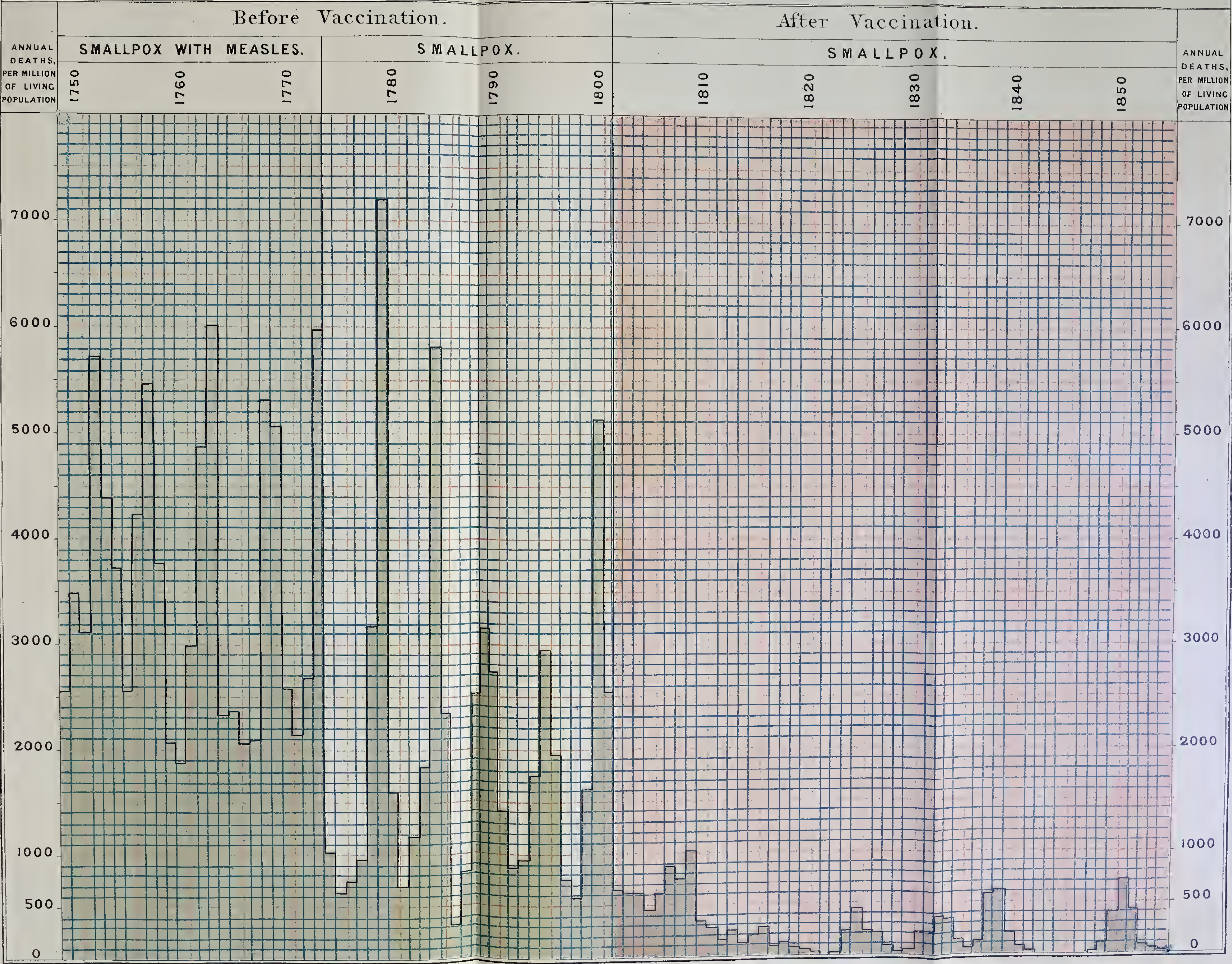
In respect of certain countries, these questions are admirably answered in papers already before Parliament. Four or five years ago the Epidemiological Society of London appointed a committee of its members to conduct inquiries connected with small-pox and vaccination. The committee, having obtained from foreign governments the communication of most important statistical facts as to the decline of small-pox, reported (*inter alia*) these results to the Society; and soon afterwards this valuable Report (specially the work, I believe, of Dr. Seaton, honorary secretary to the committee) was ordered to be printed for presentation to both Houses of Parliament.

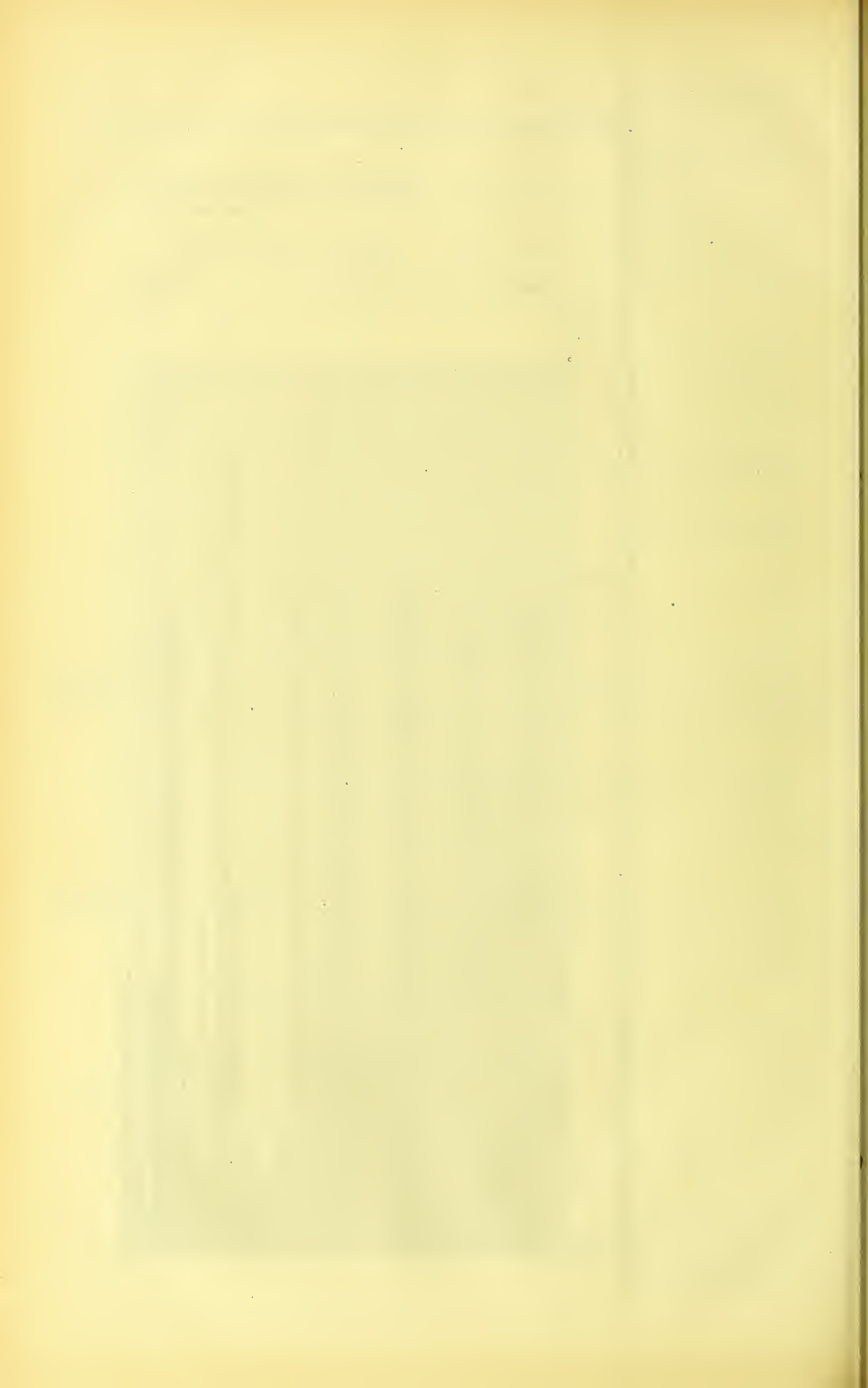
Its results in a tabular form.

For reasons with which I need not trouble you, I neither quote at length the statistical tables of that Report, nor exactly follow their form; but, extracting from the foreign communications of its Appendix such particulars only as relate to *Population* and *Small-pox*, and distinguishing these into two periods, I obtain all requisite means for comparing the past and present ravages of the disease. On this plan the following table has been constructed; and in observing the last columns (calculated by Mr. Haile from the materials referred to) you will notice, side by side, two series of facts:—1st, how many persons in each million of population annually died of small-pox *before* the use of vaccination; and 2dly, how many persons in each million of population have annually died of small-pox *since* the use of vaccination. And lest these facts should appear a whit stronger or less strong

* There always has been, and there always must be a kind of opposition to which my text does not refer, and against which it would be ridiculous to argue. What has sounded like a voice of dissent has sometimes been only the jingle of an advertising cart. What has looked like a conflict of opinion has sometimes been the mere hustling of pickpockets in a crowd. For quacks with their touters have often found it convenient to hitch themselves on to the skirts of a discussion in which the public has been interested; ready for any chance of reviling the science which condemns their wretched arts; but above all, eager to assure their dupes that while vaccination is so worthless a precaution, life may be prolonged and youth made perpetual by one incomparable pill or elixir.

SMALLPOX DEATH RATES FOR THE KINGDOM OF SWEDEN, FOR THE 107 YEARS 1749-1855.
Calculated by Mr. Haile from returns communicated by the Swedish Government.





strong than they really are, I have set in the other side of the table, opposite the name of each territory, a statement of what periods of time are referred to in the particular comparison.

The results are truly conclusive.

Compare, for instance, in the case of Sweden, the twenty-eight years before vaccination* with forty years soon afterwards:—during the earlier period there used to die of small-pox, out of each million of the Swedish population, 2,050 victims annually;—during the later period, out of each million of population, the small-pox deaths have annually averaged 158.

Or compare two periods in Westphalia; during the years 1776–80, the small-pox death rate was 2,643; during the thirty-five years 1816–50, it was only 114.

Or taking together the three lines which belong to Bohemia, Moravia, and Austrian Silesia, you find that where formerly (1777–1806) there died 4,000, there now die 200.

Or taking two metropolitan cities; you find that in Copenhagen, for the half century 1751–1800, the small-pox death-rate was 3,128, but for the next half century only 286; and still better in Berlin, where for twenty-four years preceding the general use of vaccination, the small-pox death-rate had been 3,422; for forty years subsequently it has been only 176.

In other words, the fatality of small-pox in Copenhagen is but an eleventh of what it was; in Sweden little over a thirteenth; in Berlin and in large parts of Austria, but a twentieth; in Westphalia but a twenty-fifth. In the last-named instance, there now die of small-pox but four persons, where formerly there died a hundred.

Other national statistics are not sufficiently accurate for the purposes of an equally exact comparison.

From such information as exists, it seems probable that the small-pox death-rate of London within the Bills of Mortality, during the eighteenth century, ranged from 3,000 to 5,000. During the ten years, 1846–55, it was under 340.

Dr. Lettsom, in his evidence before the Parliamentary Committee of 1802, stated reasons for estimating the small-pox death-rate of England at about 3,000; and Dr. Blane's evidence was nearly to the same effect. Reference to the adjoining Tables (where the death-rates of other countries are given) and to subsequent Tables (where the death-rate of London at different periods is minutely examined), leads me to believe that such an estimate by no means exaggerates our average losses before the discovery of vaccination. In contrast therewith I shall hereafter have occasion to show that for the years 1841–53, the average small-pox death-rate of England and Wales was only 304; in 1854, only 149; in 1855, only 132.

But even the later rates, reduced as they are, belong to a population of which some considerable section is unprotected; and it is easy to observe that, in proportion as vaccination becomes more general among the given number of persons, so is the small-pox death-rate further lessened. Sufficient proofs are given by those public establishments, army, navy, and schools, in which it is the rule to vaccinate on admission all unvaccinated subjects who do not show marks of previous small pox. Thus, in an important paper (App. E., reprinted from the *Transactions of the Medical and Chirurgical Society of London*) Dr Balfour shows that the small-pox mortality of the British navy has not reached a third, nor that of the British army a fourth, of the London rate; and that in the experience of the Royal Military Asylum for 48 years (within which time 5,774 boys have been received for training), only four deaths by small-pox have occurred, and *these all in non-vaccinated boys* who were believed already to have suffered small-pox once before becoming inmates of the school. In two severe epidemics of small-pox which prevailed in Malta in the years 1830–1 and 1838–9, the death-rate of the general population was just twenty times the death-rate of the military population.† Other evidence of the same nature may be collected from materials in the Appendix, to which I shall hereafter more particularly refer.

It

* The small-pox death-rate for this earlier period has been calculated from the numbers given in an important paper (App., p. 416) which we owe to the Swedish Board of Health. It is on the same paper that the annexed Diagram is founded, which represents the annual fluctuations of small-pox mortality in Sweden for the last 82 years, and less perfectly for the 25 years previous. Before 1774, measles and small-pox were unfortunately not distinguished in the mortuary registers of the kingdom; so that the first section of the table must be read with allowance for this combination. During the period referred to in the text, small-pox deaths were separately enumerated, and of course are alone counted in the estimate there given of the small-pox death-rates for 1774–1801, and 1810–50. The first successful vaccinations in Sweden were performed at the end of 1801, namely (in Malmö) November 23, and (in Stockholm) December 17. About 1810, the vaccinations were amounting to nearly a quarter of the number of births.

† Wunderlich's *Handbuch der Pathologie u. Therapie*, vol. iv. p. 207.

Contrast of periods before and after vaccination in Austria, Prussia, Sweden, and Copenhagen.

Terms of Years respecting which Particulars are given.	Territory.	Approximate Average Annual Death-rate by Small-pox per Million of Living Population.	
		Before Introduction of Vaccination.	After Introduction of Vaccination.
1777–1806 and 1807–1850 -	Austria, Lower -	2,484	340
1777–1806 and 1807–1850 -	Upper and Salzburg -	1,421	501
1777–1806 and 1807–1850 -	Styria - - -	1,052	446
1777–1806 and 1807–1850 -	Illyria - - -	518	244
1777–1806 and 1838–1850 -	Trieste - - -	14,046	182
1777–1803 and 1807–1850 -	Tyrol and Voralberg -	911	170
1777–1806 and 1807–1850 -	Bohemia - - -	2,174	215
1777–1806 and 1807–1850 -	Moravia - - -	5,402	255
1777–1806 and 1807–1850 -	Silesia (Austrian) -	5,812	198
1777–1806 and 1807–1850 -	Gallicia - - -	1,194	676
1787–1806 and 1807–1850 -	Bukowina - - -	3,527	516
1817–1850 -	Dalmatia - - -	-	86
1817–1850 -	Lombardy - - -	-	87
1817–1850 -	Venice - - -	-	70
1831–1850 -	Military Frontier -	-	288
1776–1780 and 1810–1850 -	Prussia (Eastern Provinces.) -	3,321	56
1780 and 1810–1850 -	Prussia (Western Provinces.) -	2,272	356
1780 and 1816–1850 -	Posen - - -	1,911	743
1776–1780 and 1810–1850 -	Brandenburg - -	2,181	181
1776–1780 and 1816–1850 -	Westphalia - - -	2,643	114
1776–1780 and 1816–1850 -	Rhenish Provinces -	908	90
1781–1805 and 1810–1850 -	Berlin - - -	3,422	176
1776–1780 and 1816–1850 -	Saxony (Prussian) -	719	170
1780 and 1810–1850 -	Pomerania - - -	1,774	130
1810–1850 -	Silesia (Prussian) -	-	310
1774–1801 and 1810–1850 -	Sweden - - -	2,050	158
1751–1800 and 1801–1850 -	Copenhagen - - -	3,128	286

Further exclusion of small-pox in proportion as vaccination is general.

See Diagram appended.

Appendix, No. 6.

A check.

It is a vast improvement which the above figures demonstrate. Yet, unequalled as have been already the benefits to mankind conferred by the discovery of vaccination, the gain would have been greater but for a disappointment which I have now to mention.

Post-vaccinal small-pox.

In the early days of vaccination it was noticed that every now and then small-pox would attack a person said to have been vaccinated. Enemies used this fact with so much exaggeration and spiteful triumph, that sober persons at first hardly gave it the attention it deserved. But though often vaunted in mere malice, it was in substance true, that vaccinated persons did not, even then, *invariably* resist small-pox. In the two reports (1806 and 1807) to which I have already referred, these exceptional failures were admitted in the following terms:—

Early illustrations.

First, (Rept. R. Jenn. Institution, *seq.* page 391):—

“That most of the cases which have been brought forward as instances of the failure of vaccination to prevent the small-pox, and which have been the subjects of public attention and conversation, are either wholly unfounded or grossly misrepresented; that many persons have been declared duly vaccinated, when the operation was performed in a very negligent and unskilful manner, and when the inoculator did not afterwards see the patients, and therefore could not ascertain whether infection had taken place or not; and that to this cause are certainly to be attributed many of the cases adduced in proof of the inefficacy of the cow-pox; that some cases have been brought before the Committee on which they could form no decisive opinion, from the want of necessary information as to the regularity of the preceding vaccination, or the reality of the subsequent appearance of the small-pox; that it is admitted by the Committee that a few cases have been brought before them of persons having the small-pox, who had apparently passed through the cow-pox in a regular way; that cases, supported by evidence equally strong, have been also brought before them of persons who, after having once regularly passed through the small-pox, either by inoculation or natural infection, have had that disease a second time; that in many cases in which the small-pox has occurred a second time after inoculation or the natural disease, such recurrence has been particularly severe and often fatal; whereas, when it has appeared to occur after vaccination, the disease has generally been so mild as to lose some of its characteristic marks, and even sometimes to render its existence doubtful.”

And, secondly (Rept. Coll. Physicians, *seq.* page 394):—

“The security derived from vaccination against the small-pox, if not absolutely perfect, is as nearly so as can perhaps be expected from any human discovery; for, among several hundred thousand cases with the results of which the College have been made acquainted, the number of alleged failures has been surprisingly small, so much so as to form certainly no reasonable objection to the general adoption of vaccination; for it appears that there are not nearly so many failures in a given number of vaccinated persons as there are deaths in an equal number of persons inoculated for the small-pox; nothing can more clearly demonstrate the superiority of vaccination over the inoculation of the small-pox than this consideration; and it is a most important fact, which has been confirmed in the course of this inquiry, that in almost every case where the small-pox has succeeded vaccination, whether by inoculation or by casual infection, the disease has varied much from its ordinary course; it has neither been the same in violence nor in the duration of its symptoms, but has, with very few exceptions, been remarkably mild, as if the small-pox had been deprived, by the previous vaccine disease, of all its usual malignity.”

Increased numbers.

During the next 20 or 30 years the proportion of these puzzling cases was constantly on the increase, and in some epidemic seasons they presented a very alarming total.

Excessive anxiety;

Allowance might be made for many instances in which vaccination had evidently been performed without care or knowledge; for some, in which spurious lymph had been used; for others, in which the immediate success of the operation had not been verified, and so forth; but, with all reasonable deduction from the aggregate, there still remained much to perplex and disappoint every honest observer. Injudicious friends of vaccination strove to disguise these facts; but there were still living some of their old antagonists who were not sorry to have another chance of victory; and happily there were also competent inquirers willing to look only for truth in the matter. And at no moment in the progress of Jenner's discovery had impartial investigation been more needed than now; for, partly by the facts themselves, and partly by hostile overstatement of them, public confidence began to be disquieted. There seemed a breach in the contract under which vaccination had been accepted. In what had promised so much, failures were all the more conspicuous; men looked to them, even where most exceptional, rather than to the successes of vaccination; and there were (1820-35) not a few persons whose minds began to misgive them, whether the old plan of small-pox inoculation had not perhaps been too easily abandoned.*

To

* Persons entertaining this doubt overlooked a possibility which happily for mankind has never been fully tested—a possibility that small-pox inoculation, if it had been generally adopted at a sufficiently early period of life to prevent infantine deaths by natural small-pox, might itself have proved in many instances

Appendix, No. 6.

Which further observations relieved.

Habitual mildness of post-vaccinal small-pox.

To us, in the present day, this doubt cannot occur. The statistics I have quoted show beyond question that, whatever partial unexpected weakness may have been discovered in the protectiveness of the vaccination, still—even with that weakness—its adoption has been followed by a reduction of small-pox mortality to a tenth and a twentieth of its former magnitude. But, in fact, long before these statistics could be compiled, popular observation, with rough and ready induction, had come to the same result. Everyone could see that a vast majority of vaccinated persons escaped small-pox; everyone could also see that if a vaccinated person caught small-pox he suffered from it comparatively little. And on those very occasions when the large number of persons suffering small-pox after vaccination was most calculated to weaken confidence in its absolute powers of prevention, there were the best opportunities to learn that if it sometimes failed to prevent, at least it might be relied on to mitigate.

Thus, for instance, in a very severe epidemic of small-pox which prevailed at Norwich in 1819, Mr. Cross minutely observed 112 families, in all of which there were cases of the disease; and the annexed Table shows the result. Among 215 persons unprotected by vaccination there were 200 cases of small-pox, and of these 46 proved fatal; while among 91 vaccinated persons the only effects of this terrible infection were, (1) that one girl, who had been vaccinated nine years, “had a mild

disease, limited to 20 pocks, and lasted only six days “before it began to decline,” and (2) that another, who had been vaccinated five years “went through the disease “in half the time (of her unvaccinated sister) without “danger or detriment; a few very minute pits upon the “tip of the nose being the only permanent traces.”

	Number.	Cases of Small-pox.	Deaths by Small-pox.
Total number of persons in the } 112 infected households - - }	603	202	46
1. Protected by previous small-pox *	297	—	—
2. Protected by vaccination - -	91	2	—
3. Unprotected - - - -	215	200	46

*Mr. Cross mentions that he met with several who were supposed to have had small-pox formerly, yet (p. 15) notwithstanding took it on this occasion; but he does not state whether such cases are included in the above summary.

Similarly, Dr. Thomson of Edinburgh, recounting, some years afterwards, his experience at about the same period, says.* “My observation of the very severe small-pox epidemic “which prevailed in Scotland from 1818 to 1823 was carried on until I had an opportunity of seeing not fewer than 1,500 individuals affected with small-pox after vaccination, “and of this number only three died, but none of them with the disease in that form which “is termed malignant. I saw also about 85 cases of small-pox in persons who had previously passed through either natural or inoculated small-pox, and of this number three “also died. In addition to these, I saw also 400 cases of primary small-pox, out of which “100 died. The results gave me a confidence in the conservatory effects of vaccination, “which nothing has since occurred to shake. Small-pox has twice prevailed epidemically “in Scotland since 1823, and from all I have seen and heard I am satisfied that the proportion of deaths in the several classes of patients I have mentioned did not materially “differ from that above specified. In the first of these epidemics the deaths that “occurred in the vaccinated were of adult males, and in the second chiefly, I believe, of “adult females.”

Edinburgh.

Similarly again at Marseilles†:—The number of cases and of deaths in the severe epidemic of 1828, and their relation to the vaccinated, non-vaccinated, and variolated masses of exposed population, were stated as follows; the first column of figures representing an estimate (which of course can only be approximative) made for the purpose by the Société Roy. de Médecine:—

	Number.	Cases of Small-pox.	Deaths by Small-pox.
Total number of persons at the ages } (0-30) which were almost exclusively susceptible - - }	40,000	6,020	1,024
1. Protected by previous small-pox	2,000	20	4
2. Protected by vaccination - -	30,000	2,000	20
3. Unprotected - - - -	8,000	4,000	1,000

So

an impermanent protection. The following passage from the French Academical Report on the vaccinations of 1850 (p. 25) points in the direction here suggested, but is not sufficiently definite for a proof:— “L’inoculation elle-même n’était par plus efficace. De tous temps on a cité des faits contre son infallibilité. “Elle n’a pu se soutenir en Chine au delà de cinquante ans; après qui des épidémies sont venues qui en “ont montré les faiblesses; et, sans chercher si loin, Mr. Debourge de Rollot nous apprend que sous le “règne d’une épidémie à Edimbourg et dans le Devonshire les inoculés ont eu plus à se plaindre que les “vaccinés.” In the French Report there are no references which might enable the reader to verify these important assertions, and study in detail the experience which they represent.

* Seventh Report of Poor Law Commissioners, p. 148. In explanation of the very large number of cases of post-vaccinal small-pox witnessed by Dr. Thomson, it must be observed that *chicken-pox* was epidemic in Scotland at the same time as small-pox; and Dr. Thomson, considering these diseases to be of identical nature, counted them both together in his total. Also see his “Account of the Varioloid “Epidemic, 1820,” and “Historical Sketch of Opinions respecting the Secondary Occurrence of Small- “pox,” 1822.

† Bousquet Traité de la Vaccine; Paris, 1833; p. 195.
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Appendix, No. 6.
Copenhagen.

So also (as quoted by Steinbrenner) in Copenhagen:—of 659 vaccinated persons who suffered in the variolous epidemics 1823-7, only five died, being at the rate of 1 in 132; while of 176 unvaccinated persons who caught the disease, more than a fourth seem to have died; and of 153 others, who professed previously to have had small-pox, there died 31. And similarly in the epidemic of 1828-30, and part of that of 1832-7, it seems that out of 228 unprotected patients 63 had died; but of 1,373 cases of post-vaccinal small-pox only 14 were fatal.

Numerous other
illustrations.

Observations, more or less to the same effect, have been made, I believe, in every country to which vaccination has extended, and at every time when epidemic small-pox has prevailed.

Places and Times of Observation.	Total Number of Cases Observed.	Death Rate per 100 Cases.	
		Among the Unprotected.	Among the Vaccinated.
France, 1816-41 - - - -	16,397	16½	1
Quebec,* 1819-20 - - - -	140	27	1½
Philadelphia, † 1825 - - - -	5,838	60	0
Canton Vaud, † 1825-9 - - - -	134	24	2½
Darkehmen, † 1828-9 - - - -	900	18½	0
Verona, † 1828-39 - - - -	10,240	46½	5
Milan,** 1830-51 - - - -	220	38½	7½
Breslau, † 1831-3 - - - -	1,442	53½	2½
Wurtemberg, †† 1831½-5½ - - - -	442	27½	7½
Carniola, § 1834-5 - - - -	360	16½	4½
Vienna Hospital, † 1834 - - - -	1,626	51½	12½
Carinthia, § 1834-5 - - - -	1,002	14½	2½
Adriatic, † 1835 - - - -	2,287	15½	2½
Lower Austria, † 1835 - - - -	15,640	25½	11½
Bohemia, ¶ 1835-55 - - - -	1,059	29½	5½
Gallicia, † 1836 - - - -	723	23½	5½
Dalmatia, † 1836 - - - -	9,000	19½	8½
London Small-pox Hospital, ¶ 1836-56 - - - -	6,213	35½	7
Vienna Hospital, ¶ 1837-56 - - - -	218	30	5
Kiel, ¶ 1852-3 - - - -	6,258	32	6
Wurtemberg, no date - - - -	7,570	38½	3½
Malta, †† no date - - - -	4,624	21½	4½
Epidemiolog. Soc. Returns, †† no date - - - -		23	2½

* Thomson, Small-pox, p. 376. The Quebec epidemic is described to "have spread rapidly among the unvaccinated, and carried off many adults as well as children. The proportion of deaths in the unvaccinated was from 1 to 3½ to 1 in 4."

† Steinbrenner, op. cit. pp. 105, 110, 231, 232, 280, 281, 283, 295. In the Breslau epidemic, one patient is stated to have suffered small-pox for a third time. † Rigoni-Stern, as quoted (p. 50) by Prof. Haeser; die Vaccination und ihre neuesten Gegner, 1854. It is mentioned that of 24 persons who during this period suffered second attacks of small-pox, no fewer than eight died.

§ Med. Jahrb. d. Oesterr. Staates, 1838.

¶ Details annexed in Supplement. The 20 years' experience of the Vienna Hospital is detailed in the Report of the College of Surgeons, and in the statement of Professor Hebra.

|| Wunderlich's Handbuch d. Path. u. Therap. 1855, iv. 201.

** Canstatt's Jahresbericht, 1852.

†† Heim, op. infra citat. In these epidemics there were reported 57 cases of persons suffering small-pox for a second time; and of the 57, there were 16 fatal. In the Wurtemberg epidemics afterwards referred to, there were reported 86 cases of secondary small-pox, among which 12 were fatal.

‡‡ Seaton, on the Protective Value of Vaccination. Dr. Seaton quotes 203 cases of secondary small-pox, as reported to the Epidemiological Society. Of these 17 were fatal. In Mr. Marson's paper relating to the London Small-pox Hospital there are mentioned 47 cases of secondary small-pox. Of these eight died from the disease, and one from an accidental complication.

Mr. Marson's
observations.

The establishment of this truth is the work of Mr. Marson, who for more than 20 years has been Resident Surgeon of the London Small-pox Hospital, and who founds his conclusion on many thousands of cases, which during this time he has attended, and of which he

Sometimes the difference has seemed less, sometimes more; but difference, and very great difference, in favour of vaccinated persons, as regards the severity of small-pox, if it should happen to befall them, is made certain by the general and strong testimony of innumerable observers. The adjoining illustrations* are selected from various sources, and it would be easy to multiply their number to any desired extent. The largest illustrations are generally least likely to be deceptive; I would therefore point especially to the case of Bohemia, where (according to observations made for 21 years on 4,000,000 of people) the risk of death to vaccinated persons, if they happen to contract small-pox, is at the rate of 5½ per 100 patients; but to non-vaccinated persons, when they contract small-pox, at the rate of 29½ per 100 patients; or to the concurrent testimony of London, Milan, and Vienna, as showing, on an experience of nearly 26,000 cases, that post-vaccinal small-pox, if it occurs, is but a fifth or a sixth as dangerous as natural small-pox.

This, however, is only a part of the case; and I venture especially to beg your attention to what remains, as it is of much administrative importance. When the above and similar statistics are seen in mass, it is merely noticed that, among a number of persons suffering small-pox, those who have previously been vaccinated incur much less risk than others. But when such a mass is dissected, there comes out as a second fact, that this lesser risk of the vaccinated has a graduated scale of its own; and that, among vaccinated persons infected with small-pox, the danger of the disease is chiefly determined by the badness and insufficiency of their vaccination.

* It will be observed in the Table that the fatality of small-pox, as it occurred in unprotected persons ranged from under 15 (Carinthia) to 60 (Philadelphia) per cent.; while in persons who contracted the disease after previous vaccination its fatality ranged from an inappreciable smallness to 11 (Lower Austria), and even 13½ (Vienna Hospital) per cent. This extensive range in each column depends on various circumstances. Sometimes, no doubt, material differences of classification have been made, one observer having included, while another has excluded, cases of true chicken-pox; sometimes (where the observation is that of hospital practice) only the graver cases of small-pox have been admitted for treatment; sometimes a particular epidemic has been in its form milder or more severe; sometimes (as the reporter mentions of 15 out of the 25 deaths in the Vienna Hospital in 1834) cases are included in which the fatal issue was not due to small-pox. But, generally speaking, such circumstances would effect equally both enumerations (vaccinated and unvaccinated) in any one epidemic, and would certainly give no fallacious result in favour of the former. And in comparing together the enumerations of any one epidemic, it will be noticed that always there is a marked difference in favour of the vaccinated class; so that they, if infected with small-pox, have not, even in extreme cases (Lower Austria or Dalmatia) incurred half the risk of non-vaccinated patients. In many lines of the above statistical table true chicken-pox is no doubt often reckoned as small-pox. In the returns of the London Small-pox Hospital a distinction is drawn between it and the varicelloid modification of small-pox: the former is excluded, and the latter (almost entirely occurring in vaccinated persons) is retained. This plan probably gives the most correct means of comparison. From the line which relates to the Vienna Hospital in 1834, there are excluded 533 cases of so-called chicken-pox; and judging by the high death-rate which results for the vaccinated persons, I should suppose that "varicella" had there been allowed to include many cases which in England would have been grouped as "varicelloid modifications"—i. e., vaccinal mitigations of small-pox. For the reverse reason, the Vienna experience of 1837-56 gives rates lower than they would have reckoned here; for the total number of cases (6,213) includes 3,415 of so-called varicella; and of these, no doubt, a certain proportion would in England have been excluded as cases—not of vaccinal modification, but—of true chicken-pox.

he has kept accurate notes.* Conceiving it to be, for practical purposes, a discovery of high importance, I† annex a copy of the original paper, in which Mr. Marson, four years ago, communicated it to the Royal Medical and Chirurgical Society of London; and likewise a copy of the petition, last year addressed by Mr. Marson to the House of Commons, in which he briefly states the result of his large and laborious experience in small-pox and vaccination.

His conclusions, so far as they relate to my present point, are as follows:—That the fatality of small-pox, when it attacks the unvaccinated, is 350 per thousand; that its fatality to such vaccinated persons as it infects is, taking them indiscriminately, 70 per thousand; but, distinguishing vaccinated persons into two classes,—those (1) who have been vaccinated in the best known manner, and those (2) who have been badly vaccinated,—the fatality of small-pox, if it infects the former, will be five per thousand; if it infects the latter, 150 per thousand: that the risk of the one will be thirty times the risk of the other.

Such being the *almost perfect security* which well-performed infantine vaccination confers against death by small-pox, it remains to be considered whether here is the necessary limit of Jenner's benefaction to mankind. The remnant of danger is not great. But, such as it is, can it be prevented?

Almost perfect security given by good vaccination.

Thirty years ago, when first it became notorious that small-pox might affect a certain proportion of persons previously and properly vaccinated, this partial failure of protection was explained on one or other of two suppositions:—Either (it was said) the vaccine contagion,‡ in its transmission through so many human subjects, must have lost by degeneration some of that specific protective influence which, in its former condition, it exerted on the human economy; or else there must be essentially something of uncertain constancy, something impermanent or liable to be impermanent, in the privileges which vaccination confers.

Further inquiry into post-vaccinal small-pox.

Two supposed causes of its occurrence.

To the former of these possibilities I shall presently revert, and will now only remark, that, viewed as an alternative to the other, it was judged to be an insufficient explanation.

For what chiefly attracted attention was this: not that persons vaccinated by the surgeons of 1820-30 with the lymph of 1820-30 were less protected against small-pox than persons who had been vaccinated in 1798; but, generally, that persons who had been vaccinated ten or fifteen or twenty years, and who, during this interval, had perhaps repeatedly resisted small-pox, would at length, in a certain proportion of their number, yield to the infection. This had most frequently happened during times when small-pox was severely epidemic among the unvaccinated; and the first notice of the fact on a large scale in Scotland in 1818-20 merely meant that then, for the first time, *large masses of persons with vaccination* of

Lapse of time as cause.

* Dr. Kinnis, formerly Superintendent of Vaccination at Colombo, in his "Report on Small-pox as it appeared at Ceylon in 1833-4," and in an Appendix relating to observations made by Dr. Forbes in the epidemic of 1830, gives enumerations from which the annexed Table is compiled. It will be observed, that the gradation of death-rates, marked in the last column, though far less detailed than in Mr. Marson's statement, is to the same general effect. And in the cases noticed by Dr. Kinnis himself the difference is further developed; for he distinguished persons pretending to have been vaccinated into such as had *no marks*, and such as had *unsatisfactory marks*, of vaccination, and found that the death-rate of the latter was $26\frac{1}{2}$, that of the former $32\frac{1}{4}$. Cases of chicken-pox are not included in the annexed Table; and Dr. Kinnis gives at length (pp. 10-14) his reasons for concluding "that the febrile eruptive disease known in Ceylon by the name of chicken-pox arises from an infectious matter, essentially different from that which produces small and modified small-pox."—Op. cit. Colombo Govt. Press, 1835.

OCCURRENCE and FATALITY OF SMALL-POX.

	Number of Cases.	Number of Deaths.	Percentage of Deaths.
(1) In persons decidedly not vaccinated	351	146	$41\frac{1}{2}$
(2) In persons having no marks, or but unsatisfactory marks of vaccination	199	52	$26\frac{1}{10}$
(3) In persons having satisfactory marks of vaccination	187	3	$1\frac{3}{5}$
(4) In persons having marks of small-pox	4	2	—

[† Mr. Marson having personally laid before the Committee his complete experience down to the present time, I think it unnecessary to subjoin the above-mentioned records of his earlier experience. J. S. 1871.]

‡ I avoid speaking of the vaccine *lymph*, as being weakened by transmission through many human subjects, because this expression often represents a misunderstanding of what really occurs in the propagation of disease by morbid poisons. Lively arguments for the *necessary degeneration of the vaccine contagion* have proceeded on a belief that the original cow-pox at each vaccination *simply dilutes itself with certain passive juices* of the vaccinated body, that it thus of course gets weaker and weaker at every stage, till at its thirty-fifth succession it is reduced, according to Dr. Nicolai, to at least the $\frac{1}{8,809,458,688}$ th fraction of its original power. This argument founds itself on a radical misapprehension of the infective process in question. What essentially marks the infective action of cow-pox, small-pox, and similar morbid poisons, is, that under their *fermentative influence* some ingredient of the infected body converts itself into their likeness. The material contained within certain vaccine vesicles is not a something which has been transfused into the body, but a something which has been generated within it by a specific decomposition of its own proper substance; and the original lymph, which acted as a ferment to this process, has very probably completed its decay, and altogether passed from the scene before those new vesicles begin to show themselves. Successive dynamical infections do not imply a perpetuation (with corresponding infinitesimal subdivision) of the original efficient; or Nicolai's argument might equally have been used to prove that the power of human procreation could not but cease soon after the days of Adam.

Appendix, No. 6. *of many years standing* were exposed to the test of a strong epidemic influence. Under this ordeal it had become evident that, for some vaccinated persons, the insusceptibility conferred by cow-pox was not of life-long duration. And from careful analysis of cases it was shown, that this lesser protectedness of certain vaccinated persons bore at least *some* proportion to the number of years which in each case had elapsed since vaccination. Some proportion, I say:—for (1st) there were not materials to prove any uniform rate of increase from year to year; and, (2nd) the increase, such as it was, apparently continued up to about thirty years of age; after which period it seemed that, in the class of persons now under consideration, the liability to contract small-pox underwent a continuous decline. Thus (to select an illustration from a work to which I shall presently make more particular reference) Professor Heim, taking 1,055 cases of modified or unmodified small-pox in vaccinated persons, distinguishing them under 35 heads corresponding severally to the number of years—from 1 to 35—which had elapsed since vaccination.* The 35 numbers corresponding to the 35 successive years are severally as follows:—15, 4, 4, 7, 10, 9, 12, 16, 17, 14, 14, 21;—44, 45, 62, 48, 59, 43, 57, 68, 44, 40, 50, 53, 52, 46, 41, 27, 41;—17, 16, 13, 6, 32, 8. It is true that, taken year by year, this series is irregular, as might be expected in so limited an experience; but when it is divided into three successive parts—one for the *first twelve* years after vaccination, one for the *next seventeen*, and one for the *following six* years,—it appears that the average number of cases for each year is, in the first division 12, in the second division 48, in the third division 15. Or if the series be divided into seven successive parts—one for each quinquenniad comprised in it—the seven quinquennial sums read thus:—40, 68, 186, 275, 239, 172, 75; and a corresponding subdivision of 653 cases which occurred at Copenhagen (according to Möhl, as quoted by Gregory) gives the series 14, 102, 173, 187, 156, 19, 2. A calculation of similar materials made by Professor Retzius (Gaz. Méd. de Paris, 1843), with respect to 961 cases in the Stockholm Hospital, gave the following series to express the average allotment of small-pox to each year of life in eleven successive quinquennials up to the age of 55:— $3\frac{1}{2}$, $4\frac{3}{4}$, $13\frac{1}{2}$, $45\frac{3}{4}$, $51\frac{3}{4}$, 40, 20, $17\frac{3}{4}$, $3\frac{1}{2}$, $2\frac{1}{2}$, 1. Mr. Marson's copious information tends to show the same thing.

Post-vaccinal small-pox made manifest by signs of artificial interference in the present distribution of small-pox deaths, as contrasted with their natural distribution before the discovery of vaccination.

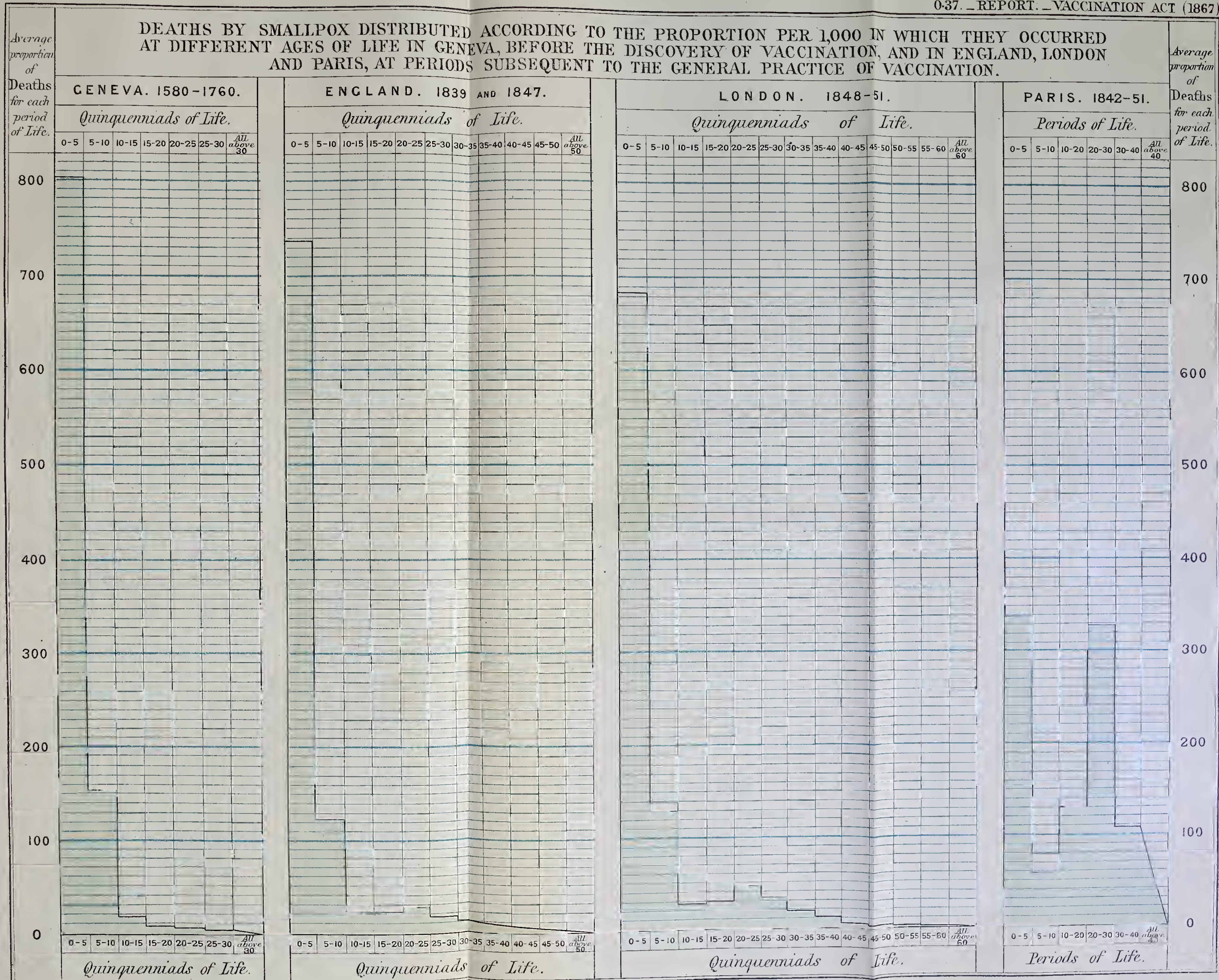
See Diagram appended.

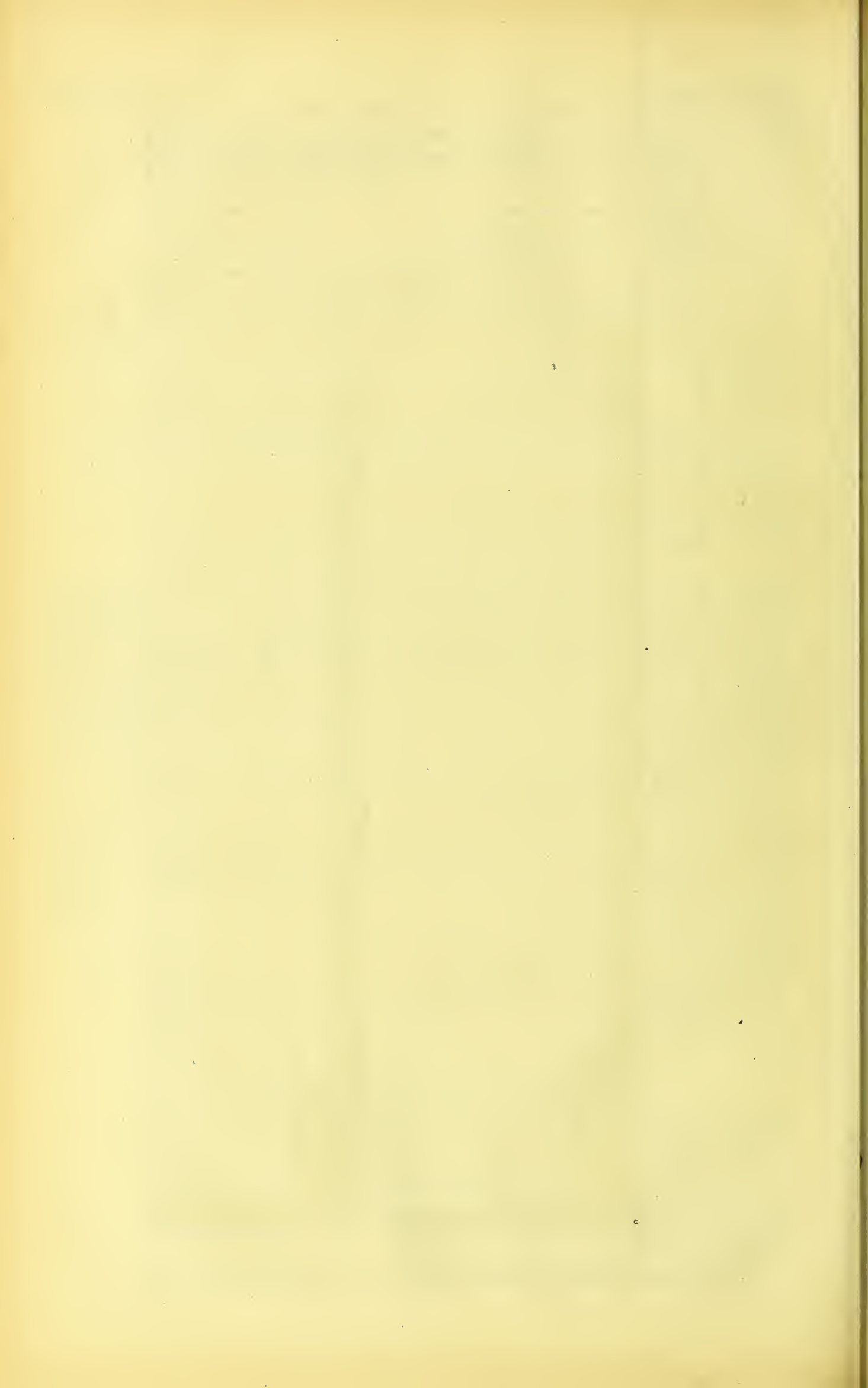
Proportionate Distribution by Age of 1,000 Small-pox Deaths in Geneva before the Discovery of Vaccination, and of the same Number in England, London, and Paris respectively, at Periods subsequent to its general practice.

Ages.	Geneva, 1580- 1760.	England, 1839 and 1847.	London, 1848-51.	Paris, 1842-51.
0-5	805	$739\frac{1}{4}$	684	338
5-10	$155\frac{3}{4}$	$127\frac{1}{2}$	131	59
10-15	$18\frac{1}{2}$	$24\frac{1}{2}$	$29\frac{1}{2}$	} $132\frac{3}{4}$
15-20	8	$25\frac{1}{4}$	30	
20-25	$5\frac{3}{4}$	$30\frac{1}{4}$	48	} $329\frac{1}{2}$
25-30	$4\frac{1}{2}$	$18\frac{1}{2}$	35	
30-35	} $2\frac{1}{2}$	$11\frac{1}{2}$	$19\frac{3}{4}$	} $109\frac{1}{2}$
35-40		$7\frac{3}{4}$	12	
Over 40		$15\frac{1}{4}$	$10\frac{1}{2}$	
Total	1,000	$999\frac{3}{4}$	$999\frac{3}{4}$	$1,000\frac{1}{4}$

small-pox deaths among different ages in cities where it was frequently or constantly present. In its general signification, this declining series closely resembles the present distribution of those infectious infantile diseases (measles, hooping cough, and scarlet fever) for which hitherto no prevention has been found, and which therefore in their distribution express

In a medical pamphlet of 25 years ago (Address to Parents and Guardians on the Present State of Vaccination by a Candid Observer; London, 1822; p. 47) I read, "There are strong grounds for believing that this peculiarity of constitution, which disposes to attacks of modified or vaccine small-pox, is hereditary." A medical friend writes to me, that he and his two brothers were vaccinated in infancy to the satisfaction of their then doctor, that some years subsequently, when they were severally aged 12, 11, and 7, the second of them contracted small-pox in a very severe form, and the other two caught the disease from him; that my correspondent himself, when 20 years of age, having occasion to attend the post-mortem examination of a patient who had died of small-pox, again contracted the disease, and in his turn communicated a second infection to both his brothers, who, like himself, had suffered it before. Dr. Arnott tells me, that he attended in Spain a case of post-vaccinal confluent small-pox, where the patient's father had had small-pox twice, and her uncle three times, another uncle having died with a first attack of the disease. I have notes of an instance, published, I believe by Dr. Webster, where three brothers and sisters had had post-vaccinal small-pox; one of them once; another twice; and the other three times, including a last and fatal attack.





express unmodified natural affinities.* In those columns of the table which relate to London and Paris the declining series is interrupted; in the latter case most remarkably.† This interruption is certainly artificial; and no doubt chiefly denotes the mortality of post-vaccinal small-pox. In other words, vaccination has established an interference with the natural series: at a certain period this artificial interference is to some extent withdrawn, and the death-list begins to contain cases which formerly would have belonged to early periods of life: cases, where vaccination has only sufficed to postpone the fatal infection.

I refrain from inserting in the text of this letter any discussion of the very interesting pathological considerations by which those new facts in the science of vaccination may to some extent be interpreted.

You will chiefly care to notice their practical result; namely, that men soon began to inquire, and by experiment to test, whether that absolute immunity against small-pox, which a vaccinated person in the lapse of years had partially lost, could by a second vaccination be renewed to him. And again, without dwelling on an immense detail of literature which records the tentative re-vaccinations of private practitioners (among whom Dr. Harder, of St. Petersburg, deserves especial credit), it is enough to study what has been observed in the re-vaccination of great masses of men in various military establishments, especially of Germany.

The earliest large experience of this kind came from Wirtemberg. In 1829 the practice of re-vaccinating the troops of that kingdom was commenced; and its collective results for the

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Re-vaccination proposed as the preventive of post-vaccinal small-pox.

Extensive trial in Wirtemberg.

* The adjoining table expresses in four series of figures, arranged side by side, approximately at least, as the expression of those natural affinities of disease. years of age is of course always a minority of the entire population; in England, at the last census, somewhere about 13 per cent.; but that minority furnishes the large majority of the deaths here referred to. Two-thirds of all deaths by scarlet fever, four-fifths of all deaths by natural small-pox, a still larger proportion of all deaths by measles, and 942 of every 1,000 deaths by hooping cough belong to that fraction of the population. In a word, those are distinctively infantile diseases. And the obviousness of this fact represents three conditions:—First, that the susceptibility to those diseases develops itself very early in life; secondly, that the susceptibility, when once acted on by its corresponding exterior cause, becomes exhausted more or less absolutely for the remainder of life; thirdly, that the exterior cause or infection has been of sufficiently frequent recurrence among the population for those relations of susceptibility to show themselves. For the meaning of the diseases being infantile is, not that any insusceptibility to contract them is acquired in the mere act of growing up; but that, because the susceptibility develops itself at the commencement of life, and because the exterior influence which acts upon that susceptibility is seldom absent; therefore all who have outlived the first years of childhood have commonly had each susceptibility exhausted by suffering the disease to which it relates. Hence, if all occurring cases of any such disease be classified according to the ages at which they happen, the resulting series of figures must necessarily have its maximum at that age where the special susceptibility is first fully developed. From this point it must undergo a more or less rapid and uninterrupted decline; the *uninterruptedness* being determined by the fact that at each succeeding age there will be fewer and fewer susceptible persons, the *rapidity* being graduated by the frequency or constancy with which the exterior cause is in operation. The infection of measles was carried to the Faroe islands in the year 1846, after an absence of 65 years; it was then observed that (with the exception of persons who had been touched in the former epidemic) nearly the whole population suffered. According to the very interesting history published by Dr. Panum (Virchow's Archiv. i. 492) there were, among 7,782 inhabitants of the islands, more than 6,000 attacks of measles. If these had been classified in the manner in which I speak, the maximum number corresponding to the age when the susceptibility is first fully developed, would probably have stood, as in the adjoining death-table, at the second year of life; but as all subsequent ages of that population up to 65 years represented a still susceptible class, the series of figures for these periods of life would have declined very slowly; probably, indeed, only at the same rate as the mass of living population declines from age to age. In the adjoining table, it deserves notice, that deaths from hooping cough, and (in a trifling degree) those from small-pox, are proportionally most abundant in the first year of life; deaths from measles in the second; and deaths from scarlet fever in the third. I have no reason to believe that a similar classification of *attacks* of those diseases respectively would (if one could obtain it) differ so materially from that classification of *deaths* as to reverse any important conclusion which may be drawn from the latter; and, if not, there would seem to be evidence that the several specific susceptibilities to those respective diseases develop themselves, not simultaneously, but in succession. I would not insist much on the trifling difference between 202½, 191½, and 190 in the small-pox column; for although they show that the susceptibility to small-pox is largely developed in the first year of life, yet they leave it quite possible that the full susceptibility, if it could be tested by *attacks* instead of *deaths*, might be found rather in the second and third years of life than in the first. But the very early development of full susceptibility to hooping-cough, and the later development of susceptibility to scarlet fever, are strikingly illustrated in the table. It deserves notice, however, that an analysis of deaths from the same diseases in London during the seven years 1848–54, though showing generally the same distribution among different ages, presents a remarkable exception in the case of hooping-cough; the deaths from this disease in the first biennium of life being divided nearly equally between the two years; not, as above, in the proportion of 404½ to 275, but (with a slight preponderance for the second year) in the proportion of 319½ to 323½.

† That nearly one-third of the whole number of small-pox deaths in Paris happens between the ages of 20 and 30 is one of the most startling facts I have learnt in my study of the subject. I can conceive for it no other explanation than that given in the text, and, it this be the true one, there must prevail in Paris an appalling amount of post-vaccinal small-pox. I cannot say whether difference of race may make any difference to that re-development of susceptibility to small-pox; still less can I venture to surmise whether so extreme an instability in the results of French vaccination may depend on anything peculiar to the French administration of this important agency. But if those indications be sound, which in a later part of this section I deduce from the history of re-vaccination in the Prussian army, there would apparently be cogent reasons for inquiring very critically into the *quality of lymph* which is current for the vaccinations of France.

what may be considered, The population under five Proportionate Distribution by Age of 1,000 Deaths in Geneva by Small-pox before the Discovery of Vaccination; and of the same Number of Deaths in England by Hooping Cough, Measles, and Scarlet Fever respectively, in the Year 1847.

Ages.	Small-pox.	Hooping Cough.	Measles.	Scarlet Fever.
0—1 -	202½	404½	155½	63½
1—2 -	191½	275	346½	145
2—3 -	190	138½	201½	171½
3—4 -	132½	77½	117	153
4—5 -	88½	47½	68	123½
0—5 -	805	943	883¾	656
5—10 -	155½	52½	91¾	254½
10—15 -	18½	2¼	13½	54½
15—25 -	13¾	1½	4	12½
Above 25 -	7	1½	7	22½
At all ages -	1,000	1,000	1,000	1,000

0.37.

Appendix, No. 6 the next few years are recorded in an elaborate form* by Professor Heim, of the Wirtemberg military service.

The adjoining Table presents an abstract of these results in relation to five years ter-

	Total.	Ratio of Success per 1,000 Cases Vaccinated.		
		Perfect Success.	Modified Success.	No Success.
Vaccination of the Wirtemberg Army in the five years 1831½-3½	14,384	340·2	248·3	411·5

13,681 of the above-mentioned 14,384 Military Vaccinations being classified according to the Marks of previous Vaccination or Small-pox, the Results were as under :—

Degree of Success of Re-vaccination.	Of Cases with Normal Cicatrices of Vaccination there were 7,845, and among these the Results per 1,000 were,	Of Cases with Defective Cicatrices of Vaccination there were 3,545, and among these the Results per 1,000 were,	Of Cases with no Cicatrices of Vaccination or Small-pox there were 2,025, and among these the Results per 1,000 were,	Of Cases bearing Marks of previous Small-pox there were 266, and among these the Results per 1,000 were,
Perfect -	310·4	280·7	337·3	319·5
Modified -	280·5	259·	191·1	248·1
None -	409·2	460·4	471·6	432·3

11,565 of the same Number being distributed according to Age, the Results were as under :

Degree of Success of Re-vaccination.	Under 20 Years of Age there were Re-vaccinated 124 Persons, and the Results as per 1,000 were,	Between 20 and 30 there were Re-vaccinated 11,157 Persons, and the Results per 1,000 were,	Above 30 Years of Age there were Re-vaccinated 284 Persons, and the Results as per 1,000 were,
Perfect -	338·7	285·6	426·1
Modified -	322·6	259·2	207·7
None -	338·7	455·2	366·2

re-vaccinated persons developed the same sort of vesicle as would arise from a first insertion of vaccine lymph. And it is important to observe that this renewed susceptibility to cow-pox did evidently not depend, so far as could be traced, on any original ineffectiveness of the former vaccination; for (as is expressly set forth in the second part of the table) among the 14,384 subjects of vaccination there were 7,845 who presented strictly normal scars of previous vaccination; yet nearly a third of this large number gave again exactly such local phenomena as arise in children when vaccinated for the first time.

What inference may be drawn from this?

Is it then a legitimate inference from these figures, that, if the same 14,384 soldiers had been exposed to an atmosphere of small-pox infection, every third man would have caught the disease? Certainly not. Inoculation of lymph (whether vaccine or variolous) is, so to speak, a finer and more delicate test of susceptibility to the small-pox poison than is the breathing of an infected atmosphere; so that many persons, when the lymph of cow-pox or small-pox is inserted in their skin, will give—locally at least—evidences of susceptibility which no atmospheric infection would have elicited from them. And of this, perhaps, there can be no more ready illustration than by noticing (either in another part of the annexed table, or on a still larger scale in a subsequent Table, which represents the re-vaccinations at Kasan) that persons who bore marks of previous small-pox were, in at least equal proportion with previously vaccinated persons, capable of producing perfect vaccine vesicles; and probably they too, if tested with variolous matter, would have shown at the inoculated part similar signs of susceptibility; whereas, notoriously, of persons who have once had small-pox, not nearly one-third becomes afterwards capable of contracting small-pox by frequenting the neighbourhood of the sick.

For this reason (greatly corroborated by what had already in every-day practice been observed of the immunity of once-vaccinated persons) it was evidently impossible to argue that

Ratio of Success per 1,000 Cases Re-vaccinated.

Perfect Success.	Modified Success.	No Success.
517·7	176·9	306·1

* Historisch-Kritische Darstellung der Pocken Seuchen, etc., im Königreiche Württemberg, innerhalb der fünf Jahre Juli 1831 bis Juni 1836. Professor Heim also reports (though with less exactness) the results of 29,684 re-vaccinations performed by civil practitioners in different parts of Wirtemberg, and the general results were as in the annexed form.

* Heim, op. citat, p. 594. Beim K. Militär wurde jede nicht mit dem reinsten Bilde einer vollkommenen Kuhpocke, oder mit zu grosser Randröthe und dem Anschwellen des Oberarmes verbundene Impfung unter den modificirten Erfolg locirt; wohin alle übrigen pustulösen Abnormitäten des Exanthemes gerechnet wurden, die manchen Impfehirten verleitet haben könnten, sein "guter Erfolg" auszusprechen. Als erfolglos wurde jeder nicht bis zur Blasenbildung gesteigerte Lokalprozess, und das was man falsche Kuhpocken zu nennen pflegt, aufgerechnet. Nur das ungetrübte Abbild der bei erstmals geimpften Kindern für gut erklärten Schutzpocke wurde auch an den Revaccinirten "gut" prädicirt.

that *all* who on re-vaccination yielded perfect vaccine vesicles would, on ordinary exposure to small-pox infection, have become infected with small-pox. On the other hand there could be little reason to doubt that they would have been distinctively the *endangered class*; not that all or nearly all of them would have suffered; but that from among them, more than from among other vaccinated persons, the occasional sufferers from small-pox would have come.

The experience of other countries did not fail, so far as it went, to confirm the general accuracy of the Wirtemberg observations.

Especially in the Prussian army in 1833, at the commencement of a system to which I shall presently revert as having given other remarkable results, there were re-vaccinated between 40,000 and 50,000 adults, and in about 33 per cent. of the entire number this re-vaccination took with perfect success.

In a re-vaccination of Russian soldiers at Kasan,* Dr. Thiele observed that in each 100 cases the operation succeeded perfectly or imperfectly; that the rate of perfect success was 18 $\frac{3}{8}$ per cent.; and (as there happened to be vaccinated at the same time 1,436 persons presenting marks of previous small-pox) that perfect vaccine vesicles would arise just as often on persons who had once had small-pox as on persons who had once been vaccinated.

Of nearly 24,000 re-vaccinations practised in the Danish army† in the four years 1843-45 and 1847, more than half were attended with perfect success, and more than a quarter with modified success. There remained between a fifth and sixth on whom (though most were submitted to a second trial) no impression could be produced.

Appendix, No 6.

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RESULTS of 1,795 ADULT VACCINATIONS at KASAN.

In Subjects as follows:—		Perfect Success per 100 Cases.	Imperfect Success per 100 Cases.
Presenting marks of pre- vius small-pox	1,436	18 $\frac{7}{8}$	5 $\frac{6}{7}$
Presenting marks of pre- vius vaccination	247	18 $\frac{3}{8}$	9 $\frac{3}{4}$
Presenting neither	112	29 $\frac{6}{13}$	16 $\frac{1}{12}$

RESULTS of DANISH RE-VACCINATIONS.

Perfect success	-	-	-	-	-	12,041
Modified success	-	-	-	-	-	6,131
Perfect or modified success obtained at a second trial	-	-	-	-	-	1,532
Complete failures	-	-	-	-	-	4,241
TOTAL						23,945

Of 1,050 re-vaccinations practised in the Brunswick army‡ in 1844, 502 gave the perfect and 130 the modified result.

In 1844 there were practised, in the army of Baden,§ 20,483 vaccinations, and the results stated in per-centages were as follows: Perfect success, 38·6; modified success, 26·6; failure, 34·7. In a less extensive re-vaccination (3,170 cases), which had taken place four years earlier, the perfect successes had been at the rate of 26 $\frac{1}{3}$ per cent., and the modified successes at the rate of 38 $\frac{1}{3}$. The proportion of perfect successes was also 27 per cent. in 2,355 re-vaccinations which took place in Baden in 1842.

By the earliest of these various independent observations it was put beyond question that the same lapse of time which renders some vaccinated persons again susceptible of small-pox renders them also again susceptible of cow-pox. But it remained to be seen whether that second dose of the latter infection, which it was the object of re-vaccination to introduce, would restore such persons either permanently or for a long while, to the state of security from which they had declined; whether, by successful re-vaccination, their revived susceptibility to small-pox would once more be extinguished.

Nearly 30 years have elapsed since the commencement of this practice on a large scale, and it may now fairly be judged by its fruits.

As early as 1838 Professor Heim reported its results in Wirtemberg to the following effect: That during the five years, 1833-37, though small-pox infection had been 16 times imported into different regiments of the army, there had ensued among the 14,384 re-vaccinated soldiers only (in the person of one whose re-vaccination two years before had been followed by "modified" success) a single instance of varioloid. And, similarly, in the civil practice of the kingdom during the same time, among nearly 30,000 re-vaccinated persons, there had occurred only (1) a mild case of varioloid in a woman who four years before had been re-vaccinated apparently with "modified" success, and (2) a case so trifling that it was called chicken-pox, in a man who, 15 years before, at the age of 13, had been, if not re-vaccinated, at least successfully vaccinated. Yet, within these five years, the infection had been present in 344 localities of Wirtemberg, producing 1,674 cases of true or modified small-pox among the not re-vaccinated and in part not vaccinated population of 363,298 persons in those places where it had prevailed. ||

Better,

* Henke's Zeitschr., 1839.
† Oppenh. Zeitschr., vol. 27.
‡ Henke's Zeitschr., 1842.
§ In these epidemics (as was in all where small-pox has attacked a certain proportion of the vaccinated population) the mildness of the disease in such vaccinated persons, as compared with the unvaccinated, and even with those who had previously suffered small-pox, was constantly observed. The annexed Table, compiled from Heim's material, illustrates the fact. Its chief results are inserted in the table at page 360.
|| It should be added that, in Wirtemberg, great pains were taken, by isolation of the sick, to prevent any general spread of contagion.

Total of Variola and Varioloid.	Cases, 1,677	Deaths, 198
1. Bearing marks of vaccination, or said to have been vaccinated.	1,055	75
2. Unvaccinated	387	96
3. Having previously had small-pox.	57	16
4. Undetermined	178	11

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In Prussia.

Better, because longer and larger, experience of the same kind is that of the Prussian army, as recorded year after year, by Dr. Lohmeyer, in the successive volumes of the "Berliner Medizinische Zeitung," from 1833 to the present time. In Prussia (just as in Wirtemberg) the practice of re-vaccination grew out of the knowledge that small-pox would ultimately attack a certain proportion of those who had been vaccinated only in infancy. This knowledge, too, had been dearly purchased in the Prussian army; for, during the 10 years preceding 1831, cases of post-vaccinal small-pox were increasing in number and fatality; attacks were counted annually by many hundreds, and, within the three years, 1831-33, there had occurred no fewer than 312 deaths by small-pox. For the last 20 years the Prussian army has represented an almost entirely re-vaccinated population. And what has been the contrast? 104 annual deaths by small-pox was the last experience of the former system; two annual deaths by small-pox has been the average for the re-vaccinated army. Analysing, moreover, the 40 fatal cases of small-pox which, during the last 20 years, have occurred in the Prussian army, we find that only four of the number were of persons who (it is said) had been successfully re-vaccinated.

In Bavaria, Denmark, and Sweden.

Other illustrations of the same conclusive kind may be gathered from the experience of other countries. From 1843 re-vaccination has been compulsory in the Bavarian army; and from that date to the present time (we are told) neither a single death by small-pox nor even a single case of unmodified small-pox, has occurred in that population. For the last 21 years re-vaccination has been general in the Danish army, and for the last 13 years in the Danish navy; and these two populations (we are informed) have almost entirely escaped contagion during several epidemics of small-pox.* The practice of Sweden has been similar, and its results also satisfactory.†

Dependence of post-vaccinal small-pox on original incompleteness of vaccination.

The preceding pages have shown that a liability to post-vaccinal small-pox, does, in considerable numbers of persons, tend to develop itself from about the period of puberty, and that against this danger re-vaccination gives the desired security. It remains to be considered, as an important practical question, whether that occasional tendency to lose the advantages of a first vaccination depends on such vaccination having itself been originally imperfect.

Mr. Marson's observations have shown that the *severity* of post-vaccinal small-pox is least where the local signs of vaccination are sufficient and satisfactory. Whether post-vaccinal small-pox be less *frequent* (as well as less dangerous) in the same ratio, is as yet not certainly known. But, while recognising the affirmative to be in the highest degree probable, we must admit that small-pox, though commonly in its most modified degrees, does occur in some whose scars of vaccination are in every respect normal. So that, according to such experience as hitherto exists on the subject, it may be said that, by some change proper to the vaccinated body itself in the course of its development, the protective influence even of apparently perfect vaccination tends, more or less, with time to become weakened.

Does vaccination become less protective by a weakening of its contagion in successive transmissions?

But, now reverting at length to a doubt which I have already mentioned, is there any reason to believe that this occasional impermanence of protection has, directly or indirectly, depended on impairment in the specific power of vaccine contagion? an impairment become possible since Jenner's first collection of facts? an impairment arising in the transmission of that contagion through many generations of men? On this difficult question contrary opinions have been expressed.

Opinion of Nat. Vaccine Establishment.

In a recent Annual Report (1854) of the National Vaccine Board the following paragraph occurs: "We feel it our duty, in order to dispel any doubts which may still affect the public mind, to repeat what we have so frequently stated with unabated confidence, that the vaccine lymph does not lose any of its prophylactic power by a continued transit through successive subjects, and that it is a fallacy to predicate the necessity of resorting to the original source of the cow for a renewed supply." This opinion, advanced with the authority of an establishment which, for nearly 50 years, has been concerned, and of late almost wholly concerned, in the distribution of vaccine lymph, is entitled to very respectful consideration. It represents, probably, the convictions of the permanent officers of the Board, Dr. Hue and Mr. Tomkins, founded on their own observations and correspondence, and endorsed by the three *ex-officio* members of the Board, who, on occasion of this Report, were Dr. Paris, Mr. Luke, and Dr. Nairne.

Contrary opinions.

The opinion, however, does not seem to be universally shared in other countries of Europe; and, even in England, it has been received with much hesitation by those unofficial persons who have given most labour and ability to the study of vaccination.

Some have argued that the vaccine contagion must naturally and inevitably become deteriorated in its successive human transmissions.‡ Perhaps it is only as against this unqualified belief that the above-quoted, equally unqualified opinion, has many adherents.

Others

* App. p. 409.

† App. p. 415.

‡ In support of this doctrine, reference has been made to what commonly occurs in the *clavelisation* of sheep. In order to procure a mitigation of ovine small-pox, recourse has been had to the same sort of proceeding as used to be followed on the human subject: and the contagion of the disease has been artificially conveyed from sheep to sheep by inoculation with *claveau* or lymph, derived in the first instance from an animal having the natural disease. Monsieur Hurtrel d'Arboval, in his Dictionary of Veterinary

Others believe such degeneration to be only a contingent danger.* But in a large concurrence of testimony it is recognised at least as a possibility which has very frequently been realized. Appendix, No. 6.

From so long as 40 years back, definite allegations have been made, purporting to prove that the power of vaccine lymph, as derived from successive contagions of the human subject, had progressively diminished. For instance, M. Brisset,† as early as 1818, declared that the past 10 years had made a very marked difference in the visible characters of the vaccine vesicle; adding, that, for protective purposes, it was now necessary to produce, instead of Jenner's two vesicles, eight or ten points of infection; and Dr. Meyer,‡ of Kreutzburg, not only made the important remark that, on examining, in 1824-25, nearly 4,000 vaccinated persons of all ages, he had found the older scars of vaccination much better marked than the recent ones, but also stated, on the authority of the district vaccinators, that the proportion of unsuccessful to successful vaccinations was every year growing larger; and, further, happening at this time to obtain for his own vaccinations a regenerated supply of lymph, he was able to make the supplementary observation that this almost invariably acted with effect, and that the resulting cicatrices were again after the old normal type. Other assertions to the same effect were not infrequent; but opportunities of verification were rare, and the most important investigations of the subject belong to the last 20 years. Facts alleged.

Successive comparative experiments by M. Bousquet,§ Dr. Gregory,|| Mr. Estlin, Comparative experiments.

Medicine (vol. i. p. 445) gives the following account of what ensues: "Il est une observation bien digne de remarque, c'est que le claveau perd de son activité et de sa propriété par la succession de son inoculation. Vierdin a observé qu'à la cinquième clavélisation, il ne produit pas qu'un bouton unique, et Boudouin fixe à la douzième ou quinzième clavélisation successive le dernier degré de l'affaiblissement du claveau. Passé ce terme, on ne remarque plus de véritable clavélée, ou du moins on en voit très rarement. Il est donc nécessaire de renouveler de temps en temps le claveau, en le reprenant sur des bêtes attients naturellement de la clavélée." Mr. Ceely however (to whom I owe my knowledge of this remarkable passage) does not receive, without reserve, the alleged degeneration of small-pox contagion in the sheep. He expresses to Mr. Simonds (*see the latter's work on Variol. Ovin*, p. 123) his doubt whether it may not have arisen in the absence of "care and selection in the transmission." But "if it be true, when great pains are taken to repeat inoculations with lymph in a proper state, viz., clear and limpid, it is a very remarkable and highly interesting fact, and well worthy the attention of the members of the medical and veterinary professions. . . . I cannot help suspecting that the difficulty consists in obtaining the virus before it is too late, for there certainly is a difficulty."

* It is alleged that, without any fault of the vaccinator, certain subjects act deterioratingly on the contagion which they transmit; that lymph taken from them is necessarily an inefficient lymph; that such subjects must occur in every line of succession; that thus at the end of any long series of vaccinations, effected from arm to arm *without selection of subject*, degeneration will certainly have been produced. Still more frequent danger to the efficiency of successive contagions arises of course in acts of personal carelessness, to which reference is hereafter made, especially in taking lymph from vesicles too advanced in their processes (when in fact it has degenerated), or from vesicles that have been disturbed in their course by mechanical or other irritation, or by accidentally concurrent diseases (especially skin diseases) in the subject. I cannot say to what extent the various modified stocks of contagion thus originated are capable of perpetuating their degenerative types; but whatever the extent may be, to that extent the results tend to diffuse themselves in proportion to the number of vaccinations. Whether slow progressive degeneration of the vaccine contagion in its successive human transmission be or be not proved, whether its renewal at stated intervals from the cow be or be not an unconditional necessity, the practical conclusion evidently is, that its operation must in every case be intelligently watched; that no line of transmission is to be continued through a subject in whom imperfect infection is produced; that at any such point the vaccinator must stop; and that from all such points as they are arrived at re-application must be made to the parent stock, not necessarily at its source, but at least at some stage of descent in which its infective powers are unimpaired. Upon each individual vaccinator must rest the responsibility of providing in his own practice against those obvious chances of deterioration of supply. It becomes difficult or impossible to fulfil this obligation, except where the vaccinator carries on simultaneously a certain number of vaccinations; so that he may be able at any time to choose between several arms as sources for continuing his contagion, and may never be tempted to take lymph otherwise than from the typical Jennerian vesicle of a thoroughly healthy subject. It is on these grounds that persons who have given most attention to the scientific culture of vaccination (foremost among whom I am permitted to name Mr. Ceely and Mr. Marson) look with some alarm on our present minute subdivision of the duty of public vaccination, as tending to reduce many public vaccinators to an objectionable alternative; either that they must have frequent recourse to extrinsic assistance, or must incur the chance of the contagion degenerating by its transmission through unselected subjects. This danger would of course be greatly increased if (as has been suggested) the subdivision were carried further by arranging for public vaccination under a kind of general contract with the entire medical profession.

† Mem. de la Société de la Faculté de Médecine de Paris, 1818; and *Réflexions sur la Vaccine et la Variole*; Paris, 1828. *E. g.*: "La manifestation et surtout la cessation des symptômes de la vaccine me paraissent notablement abrégées; la marche de cette maladie est plus prompte. . . . La tumeur vaccinale (dont le développement est si essentiel pour constater l'activité du virus vaccin et l'efficacité de la puissance préservatrice de la vaccine) est infiniment moins proéminente, si même on peut dire qu'elle existe." . . . &c.—*Réflex.*, p. 166.

‡ Quoted by Steinbrenner, *op. cit.* 493.

§ M. Bousquet (sur le Cow-pox découvert à Passy le 22 Mars 1836) gives an elaborate account, illustrated with coloured plates, of the differences of operation which he observed between the current lymph of 1836, and that of a new source. One important difference was in power of *taking*: "Sur un nombre égal de vaccinés avec l'ancien et le nouveau virus, le premier a donné 628 boutons et le second 776; différence 148, en faveur du dernier. Et remarquez que je ne fais souvent que deux piqûres avec le nouveau vaccin tandis que j'en fais toujours trois avec l'ancien." This at p. 24; and, as regards some other differences, at p. 20, "On voit que le nouveau vaccin marche tout à la fois plus vite et plus lentement que l'ancien; plus vite en ce qu'il donne plus tôt signe de vie; plus lentement, en ce qu'il prolonge sa carrière beaucoup plus loin," M. Bousquet adds, that in vesicles produced by the new contagion, the lymph remained effective much later than in vesicles of the former source, and that the lymph was more effective for re-vaccination.

|| Dr. Gregory (*Med. Gaz.* xxi., p. 860) drawing a distinction in 1838, between two qualities of lymph, says of that which he had abandoned, that "For three or four years past he had noticed a diminution of its intensity; eight or ten incisions produced not more irritation than the three to which I was accus-

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lin,* Professor Hering,† M. Fiard,‡ and Dr. Steinbrenner,§ have established, I think, beyond the possibility of a reasonable doubt, that certain original properties of the vaccine contagion have very generally declined, after its long successive descent from the cow. It may require separate discussion whether all of these properties are of primary importance to the purpose of vaccination; but the fact at least seems certain, that, when the first difficulties of converting the cow-pox into a human contagion have once been overcome, this newly-humanised contagion shows an amount of infective power which is not usual in lymph of long descent. The former *takes*, as the phrase is, in persons with whom the latter has failed, often, for instance, in re-vaccination. It excites local changes of an intenser kind; so active, indeed, as to render caution necessary in its use. The vesicle produced by it runs a full course, compared with which the progress of common vaccine vesicles seems unduly rapid and their termination premature. Also it renders more certain, and apparently more characteristic, that slight febrile disturbance which is proper to the action of cow-pox on the human system.

Importance of these facts in relation to the continuance of small-pox;

Now it is important to remember, that, in the comparative observations referred to, the lymph which has been stated more or less to have lost its original properties, has commonly been the current lymph of the country, the lymph of the public service. Those experiments, therefore, virtually say that millions of vaccinations have been performed with lymph not fully possessing its original endowments; and they make it at least very questionable, whether an indefinite length of transmission of the vaccine contagion, without renewal from the cow, has not been of public detriment.

Namely (1) of infantine and other natural small-pox;

For, assuming only that vaccine lymph is generally more likely to produce its expected *immediate* results in proportion as it is of short pedigree, I think this difference not unimportant. Frequent failures in vaccinating not only disappoint and annoy both parties concerned, not only discredit the operation and the operator, but likewise too often lead to an ulterior evil. Ignorant persons look rather to the mere doing of vaccination than to its success; and it constantly happens that children who have been thus nominally vaccinated are in fact left with no further attempt to secure them against small-pox.

Likewise,

"tomed 15 years ago. In March last, Mr. Marson, the resident surgeon, employed lymph from a different source. The new lymph was found to be far more intense and active than the old lymph. . . These facts have convinced me that vaccine lymph, by passing through the bodies of many persons, loses, in process of time, some essential portion of its activity."

* Mr. Estlin, in reference to one quality of lymph (*Med. Gaz.* xxii., p. 297) says, "The alterations in the vaccine infection which have appeared to me most marked are the smallness of the vesicle and its attendant areola; its rapid course; the absence of constitutional disturbance; the small quantity of lymph yielded by the vesicle; and especially the diminished activity of its infecting power." And subsequently (*Med. Gaz.* xxiv. p. 153) in reference to a different supply, which he had recently derived from its source, he observes, "Having watched the virus through 29 subjects successively (nearly one every week since the matter was derived from the cow) I have now no hesitation in stating, that I consider it a valuable supply of virus, more energetic in its local and constitutional effects, and more inclined to produce vesicles resembling what cow-pox was many years ago, than that employed by the National Vaccine Establishment." Mr. Estlin soon after published (*op. cit.* p. 208) important testimony from the Vaccine Institution of Glasgow, stating that in 43 trials made with this lymph there had not been a single failure, whereas in the last preceding 43 vaccinations made with a former lymph there had been failure in 10 cases, and spurious or imperfect vesicles in nine others; that at this institution, in the course of the preceding 3½ years, there had "at four different periods occurred an entire degeneration of the lymph, and a consequent complete failure of the vaccination;" and that, at the very time when the new supply reached them, such a failure was being illustrated in the fact that "all the children vaccinated upon the day week preceding, presented, instead of true vesicles, raw surfaces resembling spots that had been vesicated and then denuded of their cuticle."

† Professor Hering, of Stuttgart (*über Kuhpocher an Kühen*, p. 166) writes, "Die von originärer Kuhpocken-lymphe bei Kindern entstehenden Pusteln sind meist durch Grösse, stärkere locale Entzündung, heftigeres Fieber und langsameren Verlauf ausgezeichnet. In selteneren Fällen kommt aber auch das Gegentheil vor. Die stärkere Einwirkung auf den menschlichen Körper ist oft noch in der zweiten und dritten Impf-Generation bemerklich. Die Impfung mit solcher erneuertem Stoffe schlägt seltener fehl als mit dem seit langer Zeit nicht mehr aufgefrischten. Ein frieselähnliches Exanthem begleitet manchmal die Impfung mit originärer Lymphe." In the little volume referred to there is an unusual amount of information on the subject; for, during the 10 years 1827-37, genuine cow-pox had been observed in Württemberg on 69 different occasions; and its contagion had been successfully transferred to the human subject at least 170 times out of about 210 trials.

‡ M. Fiard, communicating to the Académie des Sciences in 1844 the results of an experimental comparison which he had just instituted between the action of lymph then newly derived from the cow and the action of other lymph which was of eight years' descent, uses these words: "Jusqu'au huitième jour (comme cela a lieu pour la varioloïde et la variole) la différence est nulle; mais à dater du neuvième jour, la dessiccation des pustules de l'ancien vaccin commence; elle est complète du treizième au quatorzième jour. Le nouveau, au contraire, poursuit sa marche et son développement plus lentement, et la dessiccation n'est complète que du seizième au dix-septième jour. C'est donc, entre ces deux vaccins, une différence de trois ou quatre jours. Le vaccin de Jenner, après un séjour de trente-neuf ans sur l'homme, comparé en 1836 à celui de 1836, était tombé au point qu'à sa dessiccation avait lieu douzième jour, tandis que celui de 1836, comme celui de 1844, n'arrivait à la dessiccation complète que le dix-septième jour. Il y avait donc une différence de cinq jours. Celui de 1836, aujourd'hui, après huit ans de séjour sur l'homme, comparé à celui de 1844, dont la dessiccation n'est complète que le dix-septième jour, arrive à cette dessiccation du treizième au quatorzième jour; c'est donc trois ou quatre jours qu'il a perdu sous le rapport de la durée éruptive. Or, d'après ce qui précède, il est évident que le vaccin de 1836, en huit ans, a subi aujourd'hui une atténuation. Donc il faut le remplacer par le nouveau, puis se mettre en mesure pour opérer le renouvellement tous les cinq ou six ans."—*Comptes Rendus des Séances de l'Acad.*, 1844, p. 749.

§ Dr. Steinbrenner (*op. cit.* p. 252) in describing the results of his own comparative experiments, says, "On pourrait presque dire que les pustules de vaccine ancienne sont aux pustules de vaccine régénérée ce que les pustules de varioloïde sont aux pustules de variole. En effet, comme dans la varioloïde, les pustules du vaccin ancien sont moins développées, se dessèchent plus rapidement, l'affection générale qui les accompagne est plus légère, elles laissent des cicatrices bien moins profondes," &c.

Likewise, looking to some other peculiarities which mark the action of vaccine lymph in its earlier generations, especially to that more prolonged course of the local eruption, and to that more decided febrility which attends it; symptoms, both of them, which seem to say that this infection grasps deeper and more largely into the system; I should very much hesitate to consider their occurrence indifferent to the ultimate issue of the operation.* Not venturing to speak otherwise than with sincere diffidence on what I deem one of the deepest problems in pathology, I must urge at least the *probability* that these symptoms may be the very signs and measures of that total bodily change which vaccination is intended to effect. If this be a true interpretation of their meaning surely a vaccination which is deficient in such consequences must inspire less confidence than another. And from the observations I have quoted, it would then apparently result that, after long periods of human transmission, the contagion of cow-pox has proved unable to excite in the vaccinated body its *maximum* of protective change; that lymph of shorter descent has been more successful in disinfecting the body of that ingredient which constitutes its susceptibility to small-pox.

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and (2) of post-vaccinal small-pox.

Is it, then, the case that an extensive use of degenerated lymph has determined that too frequent impermanence of protection against post-vaccinal small-pox? It is chiefly from national statistics that the answer must be sought; and the critical question to be asked in a country where the vaccine supply has seldom or never been renewed from the cow, is this:—Assuming that, from 1800 to 1840, every year's vaccination has included *a certain proportion* of infants who eventually (say 15–25 years afterwards) have become re-susceptible of small-pox—*has this proportion from year to year progressively increased?*

Statistical test.

Increasing re-susceptibility of small-pox in the vaccinated?

In respect of small-pox itself there are no facts, I believe, nearly sufficient in amount for even an approximative answer to this question;† but in respect of a closely kindred issue there are some materials of a very suggestive sort. For, if it should appear that the *proportionate re-susceptibility of vaccination at a given age* were undergoing a uniform progressive increase, this—like a uniform progressive increase of post-vaccinal small-pox—would make it almost certain that primary vaccination had progressively become less effective. And it is difficult to conceive how the infantine generations of a country could, crop by crop, successively derive less permanent constitutional impressions from vaccination, unless the efficient cause of those impressions—the vaccine contagion itself—has year by year undergone enfeeblement of its powers.

Increasing re-susceptibility of vaccination?

The case which I put as hypothetical, apparently represents the actual and immense experience of the Prussian army. There, the re-vaccination of recruits is a very uniform test. It extends annually to some 40 or 45,000 operations. It is reported on annually. Its records run back 24 years. Its total result must tell of 1,000,000 experiments; and the subjects, naturally, are of like age, in like proportions, and under like circumstances. I have already had occasion to say, that when, in 1833, this system of re-vaccination commenced, the proportion of successful results (including cases in which the success came only with a second attempt) was 33 in every 100 vaccinations. Now the annual per-centages of successful results, for the whole time during which re-vaccination has been practised in the Prussian army, beginning with the number, run thus:—33, 39, 42, 46, 49, 50, 51, 54, 57, 58, 57, 57, 58, 60, 64, 64, 64, 61, 64, 69, 69, 69, 69, 70. *The last proportion of success exceeds the double of that with which the series commenced.* Thirty-three per cent. expresses the proportion in which persons vaccinated, say 20 years previously, had, in 1833, to a certain extent lost the influence of their infantine vaccination: it measures the impermanence of certain impressions produced by the vaccinations of 1813. And that impermanence (such as it was) in the effects of vaccination has increased, almost without exception, year by year, during this quarter of a century; so that the vaccinations of 1836—tested by eventual re-susceptibility to cow-pox—were not half so stable as the vaccinations of 1813.

Successive reports of re-vaccination in the Prussian army.

That post-vaccinal small-pox may depend to some considerable extent on a primary incompleteness of that specific change which vaccination should have excited in the system; and that such incompleteness may have depended on an inactive degenerated state of the vaccine contagion;—these would seem, on analogy, reasonable inferences from the facts I have

Inferences as to the frequency of post-vaccinal small-pox.

* It is an interesting and instructive fact that, in the days of small-pox inoculation, questions very similar to these were raised. Jenner (op. cit. Edit. 3, p. 52) speaks of inoculation "with inefficacious variolous matter" which gave no permanent security, though the immediate results were to all appearance sufficient. In one striking set of cases (p. 80) a surgeon had inoculated "from a pustule which experience had since proved, was advanced too far to answer the purpose intended." The local results, which followed, and the eruptions which appeared about the ninth day (but "died away earlier than common without maturation") were such as induced the operator—and, he says, might have induced any one—"to suppose that the persons were perfectly safe from future infection." But, of the five who were thus inoculated, "four took the small-pox afterwards in the natural way; one of whom died, three recovered, and the other, being cautious to avoid as much as possible the chance of catching it, escaped from the disease through [the remaining twelve years of] life."

† It deserves to be noticed, however, that so long ago as 1833 Mr. Loy of Whitby gave (Med. Gaz., vol. xii., p. 48) an affirmative answer to the question: "I have observed (he says) in my own practice for many years, that vaccination afforded uniform protection; and since then an influence from vaccination less and less effectual in resisting the contagion of small-pox;" and after citing instances to justify his belief, that post-vaccinal small-pox was progressively becoming both more frequent and less modified, he comes to a "conclusion, that the vaccine virus had lost parts of its virtues," and recommends "reverting to its origin" as a remedy for this evil.

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have stated.* More than this I will not venture to say; for that remarkable series of figures, even with the observations previously alleged, does not constitute a proof, though it amply justifies suspicion.

The subject is one that deserves full and patient inquiry. Post-vaccinal small-pox has been a disappointment both to the public and to the medical profession. It has indeed been well to know of it that its attacks are mild in proportion as vaccination has been well performed. But better still would be its utter absence. The information I have quoted to you encourages a belief that, with *uniformly thorough* infantine vaccination, such attacks would be extremely infrequent as well as extremely mild; provided—on the strength of these last intimations—that an essential condition of thorough vaccination shall be the employment of lymph in its utmost original efficiency. Fortunately Mr. Ceely's scientific experiments, and the very useful proceedings of Mr. Badcock at Brighton, have taught the medical profession in this country that it is not requisite to depend, for renewed sources of cow-pox, on the casual occurrence of this disease in the dairy. And, although I do not feel justified in stating it as proved, that what partial insecurity still attends even well-performed vaccination would certainly cease under a more frequent (if careful) imitation of those expedients, yet, at least, I would urge them as deserving deep consideration.

General results as to the good of vaccination.

Finally, then, to sum up in a few paragraphs the practical results of this section, the last half-century's experience of vaccination justifies the following assertions:—

that in countries where vaccination is general, the fatality of small-pox has under its influence declined to some small fraction of that which formerly prevailed; that where formerly, in a given population, there would have occurred 100 deaths by small-pox, there may now occur as few as four or five; and that in this very greatly diminished number annually dying of small-pox the immense majority are unvaccinated or ill-vaccinated persons:

that vaccination performed in infancy in the best manner gives to most persons through life a complete security against attacks of small-pox:

that (in some—hitherto undetermined—proportion to the whole number of the vaccinated) certain persons, as they approach adult life, partially or wholly recover that susceptibility to small-pox which vaccination had once extinguished in them:

that perhaps more universal permanence might be given to the protective influence of infantine vaccination by well-devised arrangements for the periodical renewal of lymph; but certainly, that the renascent liability to small-pox may be guarded against by re-vaccination performed at about the period of puberty:

that even when small-pox is contracted by persons who, having been vaccinated in infancy, have not afterwards thus renewed their protection, the disease is greatly mitigated in favour of these exceptional sufferers; so that among the best-vaccinated of their number, according to the experience of the London Small-pox Hospital, its fatality is but $\frac{1}{75}$ and its chance of being confluent but $\frac{1}{10}$ as compared with the fatality and the chance of confluence of natural small-pox in unvaccinated persons:

that if, beyond the above qualifications, there still remain apparent exceptions to the uniform protective power of vaccination, they illustrate only that very infrequent peculiarity which occasions some individuals (especially in certain families) to suffer natural small-pox itself twice or thrice or even oftener; and

that, if vaccination were universally performed in the best known manner, deaths by small-pox would be among the rarest entries in the register.

IV.—ALLEGED DRAWBACKS from the ADVANTAGES of VACCINATION, AND ALLEGED DANGERS of its PRACTICE.

Retrospect.

In England, since the termination, fifty years ago, of that important inquiry which was conducted by the College of Physicians, medical literature, even of the obscurest class, contains no more mention of "new, unheard-of, and monstrous diseases," ascribed to the influence of vaccination. Nor, so far as I know, can it be said that any person enjoying in the smallest degree the confidence of the profession, or in the smallest degree entitled to offer an opinion on medical evidence, maintains that properly-performed vaccination is a dangerous proceeding. Diseases produced by vaccination occupy in medical teaching and medical conversation about the same space as diseases produced by witchcraft and the evil eye; and it seems a waste of time to revert to what, even half a century back, was recognised to be mere stupidity or mischief-making.

Foreign echoes of our old controversy.

But in some other parts of the world these questions were not in the first instance so freely canvassed as in England; and perhaps on this account it may be that within the last ten years there have been published abroad papers which correspond to our Stuart-and-Rowley period in the history of vaccination. To the English medical reader such papers, if they come at all, come only as a kind of literary fossil; reminding him of something so utterly impractical,

* It would not also follow that the imputed condition of lymph had been an *inevitable* consequence of its long descent. The alternatives apparently would be these; either the enfeeblement of the contagion has resulted, slowly but necessarily, from this mere fact of its many successive transmissions; or else, the effects of personal carelessness in the selection of lymph (see Note, p. 367) are capable of perpetuating and diffusing themselves enough to affect, very considerably, the natural statistics of small-pox.

tical, antediluvian, and extinct, that the last act he would think of committing against them would be to argue. Yet these foreign publications obtained a momentary notice in the last Parliament. And now, standing at the very threshold of the subject on which I must enter, they compel some recognition at my hands.

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It is really quite impossible for me to speak of such writings with even the semblance of respect. I am willing to believe that the authors are not actuated by unworthy intentions. But the works are so ignorantly and so impudently written—their staple consists of such reckless guesswork or such mere declamation and balderdash—that it would be a mockery to treat them as belonging to the literature of science.* I can regard them only as trivial romances; and accordingly, while I propose discussing in this section of my Letter every substantial statement which has been raised against the practice of vaccination, I must claim to leave unfollowed the mere meanderings of nonsense in which those writers indulge. Instead of arguing with them whether vaccination has increased men's consumption of tobacco and lessened their tendency to dance, I will bring before you—in reference to more important issues—such accurate knowledge as I can gather, from national statistics and from the records of scientific experience, as to the real health of vaccinated populations.

For undoubtedly, as to alleged incidental evils of vaccination, there are questions which may reasonably be asked. The fifty-nine years' experience which has established the merits of vaccination—has it shown any countervailing harm? Have vaccinated persons, in acquiring their insusceptibility to small-pox, become more susceptible of any other disease? Has anything tended to show that vaccination, however perfect for its purposes, is in other respects a disadvantage?

Questions which may fairly be asked.

In proceeding to investigate this matter, there is, first, a source of fallacy to be guarded against. Those millions whom vaccination saves from one kind of premature death must of course die eventually. Susceptibility to small-pox is a very definite state of body; equally definite and distinct are the susceptibilities to other specific diseases; and it has never been pretended that man becomes less susceptible of one because he is less susceptible of the others. Vaccination is directed against the one susceptibility only; and a child whose liability to small-pox has just been extinguished by well-performed vaccination may to-morrow, like an unvaccinated child, be run over, or be drowned, or sicken of measles, or suffer with teething, or be struck with any other of the numberless shafts of death. And the vaccinated subject advancing to adolescence, to mid-life, or to old age, must encounter, like the unvaccinated, the several risks of each period of life. And obviously, if vaccination on a given day in England secures a thousand lives against death by small-pox, sooner or later those lives will be subject to the inevitable lot; sooner or later the thousand deaths will be written against the names of other diseases than small-pox; and such diseases may then be said to have been rendered more frequent by vaccination. In the same sense every life that is snatched from fire, or flood, or poison, counts at last as a death from some other cause; and to say *in this sense* that such causes are more fatal than before vaccination, is but another form of saying, what Jenner would most have wished to hear, that small-pox is less fatal than it was.

Fallacy to be guarded against in putting the question.

But

* M. Verdc de Lisle (de la Dégénérescence Physique et Morale de l'Espèce Humaine déterminé par le Vaccin; Paris, 1855) opens his case thus:—"L'espèce humaine dégénère; aux puissantes races des siècles passés a succédé une génération petite, maigre, chétive, chauve, myope, dont le caractère est triste, l'imagination sèche, l'esprit pauvre. . . Remontons enfin à l'origine: la cause unique de ce désastre multiple c'est la vaccine. . . Voyez cette génération inerte, rachitique, frappée en naissant d'impuissance et de vieillesse. Prenez-la dès le collège, froide, en proie à une paresse triste. . . pauvres enfants, qui n'admettent que la malice paisible, pour qui l'espièglerie est trop gaie, l'exercice trop fatigant. . . Suivez-les. . . ils n'ont jamais dansé. . . Rappelez-vous nos pères, la forte race de l'empire? aujourd'hui les compagnies d'hommes de cinq pieds six pouces appartiennent à l'histoire. . . Après Voltaire, après Beaumarchais. . . le triste spectacle d'une foule de petits personnages qui ne peuvent élever leur présomption plus haut que la collaboration et la critique. . . L'Angleterre. . . n'a même plus ni un Sheridan, ni un Dryden quelconque; son éloquence parlementaire s'arrête à la pléiade contemporaine de Lord Palmerston. L'Allemagne. . . s'est arrêtée à Jean Paul. . . En musique, à défaut des Gluck, des Mozart. . . des Boieldieu. . . le métier nous donne les nombreux arrangeurs. En peinture, après les Rubens, les Van-Dick. . . il nous faut tomber sans transition de la puissance de Géricault à la patience de Meissonnier. . . On prétend être sérieux; tout simplement on est grave et ennuyé. . . A un mal, ils en ajoutent un autre; ils compliquent le premier empoisonnement, ils fument pour avoir l'air de penser. . . Les exemptions du service militaire. . . ont pris des proportions de plus en plus considérables. . . A quoi bon l'air? Les pores de la peau sont oblitérés, les poumons sont tuberculisés. . . A quoi bon la nourriture saine? à quoi bon préserver l'économie des miasmes pestilentiels?" etc.

It requires no medical knowledge to gauge the capacity of this fiction. Its nonsense is only to be equalled in burlesque literature; and perhaps the nearest parallel is presented in a familiar line of the *Rejected Addresses*, where the indignant author of "A Loyal Effusion" intimated that Napoleon Buonaparte had "filled the butchers' shops with large blue flies." The physical degeneration of man is, indeed, an old cry. Every age in its turn has looked back wistfully on some imagined possession of the golden past—some strength, or stature, or nobility which belonged exclusively to its good old times. Not two of Homer's contemporaries (οἱ τοὺν βροτοὶ εἶσι) could move such stones as Ajax and Æneas hurled; and the same tendency to believe in a gradual degeneration of mankind has, from then till now, been expressed in innumerable forms. That "the world is in its dotage," is a doctrine which, a century ago, was sufficiently current and sufficiently ridiculous to be used for the purposes of the humorist. The reader of the Vicar of Wakefield remembers it in the mouth of Ephraim Jenkinson as representing just that sort of gabble which could be used for the stock-speech of a sham philosopher; and Dr. Primrose might well, on the second occasion, think he had "heard all this before."

Appendix, No. 6.

Question in its
amended form.

But are deaths *proportionally* more numerous? On a given number of persons (say a million) is the general death-rate higher, or is the death-rate at any particular age higher, or is the death-rate of any particular disease higher, now, than in the days of inoculated or natural small-pox? Has the suppressed mortality of small-pox commuted itself for other premature death?

The material of vital statistics is hitherto not sufficiently perfect, indeed, the science in its more precise applications is of too recent date, for this question to be answered exhaustively. But I have collected some very strong statistical evidence on the subject; and, such as it is, it tallies very thoroughly with what pathology would suggest as probable—that to have mitigated the horrors of small-pox, is, indeed, an unmixed good.

I. General death-rates.

First, for the *general death-rates*:—Taking all ages together and all diseases together, what used to be before the practice of vaccination, and what has been since the practice of vaccination, the annual proportion of deaths to a given number of living persons?

England.

London.

As regards England, the means of comparing death-rates are confined to London; for before 1838 there was no general registration of deaths; and even in London they must be regarded as only approximative to the truth. During times before vaccination, there were the old Bills of Mortality; and for the last twenty years there are the Registrar General's Reports. The Bills of Mortality are notoriously imperfect. They record not deaths, as such, but burials; and not all burials within the given area, but only parochial Church of England burials. Therefore much may have been omitted from them. But it is satisfactory to know, for the purposes of the present comparison, that whatever imperfectness there is in these records would make the older times appear less unhealthy than they were.

Now the question being whether, in proportion to the diminution of small-pox, there have grown up other influences to neutralise or even reverse the advantage, I am able, so far as the general death-rate of London is concerned, to give you the following evidence. My colleague, Dr. Greenhow, Lecturer on Public Health at St. Thomas's Hospital, has made an elaborate examination of the Bills of Mortality at two different periods, far apart, before the discovery of vaccination; selecting the two particular decennial terms, 1681-90 and 1746-55, only because at a central year in each of these terms the population of London was estimated, and this estimate of population is a necessary element in the comparison. Dr. Greenhow has kindly assisted me with a paper (Appendix H.) in which he gives at length the results of this interesting comparison; and I attach the more importance to his conclusions as I know that they have been arrived at with caution and impartiality. The annexed Table gives an abstract of so much as relates to the present point. It enables you, at a glance, to judge, in respect of London at least, how far it would be correct to say, that, with the decline of small-pox, the general death-rate of the population has increased. You will notice that in the decennial period 1846-55,—though epidemic influenza and two visitations of cholera fell within it,—the general death-rate per 10,000 of living population was 25 per cent. less than in the decennial period 1746-55, and 40 per cent. less than in the decennial period 1681-90; having successively declined since the remoter period from 421 to 355, and from 355 to 249.

Average Annual Death-rates in London from all Causes and at all Ages.	
Date.	Per 10,000 Living.
1681-90 - - -	421
1746-55 - - -	355
1846-55 - - -	249

Materials for a similar but more extensive comparison are given from the pen of Dr. Farr, in the fourth edition (vol. ii. p. 613) of McCulloch's "Descriptive and Statistical Account of the British Empire." From this valuable paper I have extracted (seq. page 379) a Table which is of great interest in reference to all the present section of my subject; and I here insert from it those totals which illustrate the point I am discussing.

Average Annual Death-rates in London from all Causes and at all Ages.	
Date.	Per 10,000 Living.
A. 1629-35 - - -	500
B. 1660-79 - - -	800
C. 1728-57 - - -	520
D. 1771-80 - - -	500
E. 1801-10 - - -	292
F. 1831-5 - - -	320
G. 1840-54 - - -	248 $\frac{2}{5}$

You will observe, that in the successive lines of the annexed Table the general death-rates of London are given for seven different periods of time during more than two centuries. The first line (A) shows for the period 1629-35 (though almost exempt from epidemic disease) a general death-rate just double our present one; in the second line (B) it is seen that for the twenty years 1660-79 (including the fatal one 1665) the rate was $3\frac{1}{2}$ times as great as it now is; and in the fourth line (D) it is shown, that during ten years (1771-80) towards the end of last century, when small-pox was fourteen or fifteen times as fatal as now, the general death-rate was still double.

Denmark.

Means of extending such comparisons to other countries than our own are but scanty; yet fortunately there are illustrations enough to show that London is not alone in respect of the evidence which it gives. A statistical sheet (App. p. 410) which accompanied the general information given us by the Danish Government, contains an account relating to the city of Copenhagen, not only of deaths by small-pox for the years 1750-1850, but also of the total deaths, and of the births and population, during the same long period—half a century before and half a century after the introduction of vaccination. Causes of death are not (except small-pox) specially noticed; but the general result is enough to show that the statistics of Copenhagen concur with the statistics of London: for the sheet in question gives evidence of progressive improvement in the health of the population, and the year

1823, when for thirteen consecutive years there had not been a single death from small-pox, was also in other respects among the healthiest of the series. And the general progress of the population may be inferred from these particulars:—Of the 26 years 1750–75 there were 23 in which the deaths exceeded the births; of the 40 years 1776–1815 there were 25 in which the deaths exceeded the births; during the 35 years 1816–50 the births have exceeded the deaths on all but six occasions. Annually during the first period there were on an average 853 more deaths than births; annually during the last period there were on an average 304 more births than deaths.*

Births and Deaths in Copenhagen.	Excess of Births over Deaths.	Excess of Deaths over Births.	Average Annual Excess.
1750–75 -	-	22,186	Deaths 853
1776–1815 -	-	3,285	Deaths 82
1816–50 -	10,648	-	Births 304

The more minute statistics of Sweden (to which I must presently refer again) are equally silent as to those compensatory deaths which the suppression of small-pox is imagined to cause. In the annexed Table, ranging through the past hundred years, it is seen that in that well-vaccinated country the general death-rate of the population in 1841–50 is 29 per cent. lower than it was in 1755–75. If a third of this improvement be due to the comparative absence of small-pox, the remaining two-thirds must be referred to the simultaneous decrease of other diseases.

Average Annual Death-rate in Sweden from all Causes and at all Ages.	
Date.	Per 1,000 Living.
1755–75 - - -	289
1776–95 - - -	268
1821–40 - - -	233
1841–50 - - -	205

So far, then, as these populations are concerned, it appears that, while under the influence of vaccination, small-pox has been diminishing its ravages, so under other influences have other diseases been diminishing theirs. Under other influences, I say; for the causes of fever, the causes of cholera, the causes of consumption, are several and special causes. Each disease is affected for better or worse by influences proper to itself; and the prevention of small-pox no more implies the prevention of fever than to sow barley implies the reaping of wheat. But what has to be noticed (so far as these materials inform us) is, that annihilation of small-pox may be tried for as an unqualified physical good; that hitherto there is no trace of evidence that other diseases become more malignant in proportion as that one is subdued.

N.B.—The annual small-pox death-rate during the period 1841–50 averaged less than the weekly death-rate from small-pox and measles during the period 1755–75.

Conclusion from general death-rates.

It now remains to be seen whether, by a more detailed analysis of mortuary records—by inquiry into the death-rates of particular ages and into the prevalence of particular diseases—it may perhaps be possible to discover any kind of evil which the general death-rates have failed to betray.

II. Death-rates at particular ages and from particular diseases.

Recent pamphleteers against vaccination chiefly rely on certain fragmentary statistics, collected with more zeal than judgment by a former artillery officer, M. Carnot.† This writer believes he has discovered what he calls a *displacement of mortality*, namely, that within the present century, deaths which used to occur in early infancy have come to occur between the ages of 15 and 30. He alleges that the female death-rate in Paris for the ages 15–25 has doubled in the last 38 years; that the annual mortality of the French army on home service, was 2 per 100 during the period 1819–47, but had been only 1 per 100 before the Revolution of 1789; that of male and female deaths in Paris at ages above 15, only 35 per 100 used to happen between the ages of 15 and 45, and that now 50 per 100 are in this category; that the chances of an infant reaching 41 years of age are the same now as they were in the last century; that the death-lists of Paris for 1840–49, compared with those for 50 years previously, show some diseases (typhus, cholera, dysentery, and colic) to have increased almost as much as others (small-pox, measles, convulsions, and croup) have declined; that the annual marriages in France exceed twice as much as they 40 years ago exceeded the marrying proportion ($\frac{1}{2}$) of females who annually (on Duvillard's estimate) reach the connubial time of life, and that this increase denotes a doubled annual number of second marriages, or in other words a doubled annual quantity of early widowhood; that with a greatly increased number of marriages in France there is a diminished number of births; that the births are rapidly tending to become less numerous than the deaths; that the depopulation of France is an imminent danger, which must begin to realise itself within the next few years; that gastro-intestinal disease, especially typhoid fever, is the agent of this destruction; and finally, that the cause of this complicated derangement is the practice of vaccination.

M. Carnot's doctrine.

Now, first, let the concluding word of the summary be criticized. M. Carnot's statistics allege a difference in adult vitality between the France of to-day and the France of last century. Supposing the statistics to be correct, does he give any sufficient reason for ascribing to vaccination that deteriorated state of adult life which he professes to have discovered? So little does he this, that in any of the sentences where damnatory conclusion: are

Its logic.

* Eighty years ago the notion that London might contain an increasing population seems to have been strange to men's minds. In a pamphlet of that period (Letter to Dr. Lettsom, by an uninterested spectator of the Controversy upon General Inoculation: London, 1779) I read the following paragraph:—"I claim not the merit of starting this idea of an increased population in London as a novelty; it has been hinted by others, particularly by yourself in your medical memoirs, and by a writer who signs J.S. . . , but I think his reasoning is not quite conclusive."
† Essai de Mortalité comparée avant et depuis l'introduction de la Vaccine en France; Autun, 1849; followed by an Appendice:—Analyse de l'influence exercée par la variole, ainsi qu'il par la réaction vaccinale; Autun, 1851:—Parallèle de l'état sanitaire de Paris avant et depuis la vaccine; Rév. Méd. 1856.

Appendix, No. 6. are drawn, if there were substituted at hazard for his word *vaccination* the mention of any other historical event belonging to about the same period of time as Jenner's discovery, M. Carnot's logic would scarcely suffer by the change, or his new conclusion be less warrantable than his first. *Post ergo propter* was never more whimsically illustrated. For the argument goes simply to claim as the effect of vaccination whatever evils have happened since its discovery; and M. Carnot's moderation may be praised, that, with the infinite resources of this proof, he did not also convict Jenner of causing last year's inundations of the Rhone.

Its facts.

But are the facts such as M. Carnot pretends? I do not feel myself competent to discuss a doubtful question in the vital statistics of France; for I am but imperfectly acquainted with the relative value of those semi-official documents to which reference is made.*

M. Dupin's counter-statements.

Instead of offering opinions of my own, I will inform you that immediately after the publication of M. Carnot's first statements, M. Charles Dupin, before the Academy of Sciences (20 November 1848) treated the pretended discovery as an unmodified mare's-nest, and soon afterwards (4 December) advanced counter statistics, which claimed to show the expectation of human life at every age in France as having notably improved since the last century.†

Dr. Bertillon's calculations.

More recently, Dr. Bertillon, Physician to the Hospice de Montmorency, after statistical researches which include both periods under discussion, has communicated to the Academy of Medicine results which are in direct opposition to M. Carnot's deductions.‡ In the Vaccination Report of 1854 of the Academy of Medicine, M. Bertillon's labours are mentioned in terms of the highest praise, and his conclusions are adopted without reserve.

The subjoined Table gives a summary of these conclusions, as stated in the report of the Academy. It states, for eleven periods of life, what was and what is the average expectation of death, viz.: first, for different times in the last century, according to the several accounts successively published (1749–1806) by Dupré St. Maur, Montyon, Messance, and Duvillard; and, secondly, for the years 1849–50, according to M. Heuschling's account of the deaths in France and to several recent accounts (one of them founded on census) of the French population. In the fourth line (which is critical for the present question) the Table is read thus:—For persons aged between 20 and 30 the chance of dying was, in the first period, one in 67·97; in the second period, one in 66·40; in the third period, one in 64·67; in the fourth period, one in 73·55; in the fifth period, according to various more or less defective estimates of the population (the first of which specially illustrates a statistical fallacy) one in 73·38, one in 86·20, one in 92·80; or finally, according to the census of the population, one in 93. Or if, simplifying the comparison, we take only the first column, which corresponds to the middle of last century, with the last column, which purports to be the most trustworthy account of the present state of life in France, and reduce the figures in both to the form of *death-rates per 10,000 living at the ages in question*, we find it stated, that for persons aged between 20 and 30 the death-rate used to be 147, and is now only 107½; that for persons aged between 30 and 40 the death-rate used to be 215, and is now only 97.

Chances against Death ($\frac{\text{Pop.}}{\text{D.}}$) at different Ages of Life.	Successive Periods of 18th Century.				1849–50. Deaths by Heuschling, and Population by various Authorities.			
	Dupré St. Maur.	Montyon.	Messance.	Duvillard.	Population cited as Fallacious.	Population by Guillard.	Population by Mathieu.	Population by Census of 1851.
0 to 5 years - -	7·17	7·05	9·59	8·28	12·05	13·60	14·80	13·19
5 „ 10 „ - -	50·16	48·90	41·93	88·10	78·11	91·80	98·80	93·57
10 „ 20 „ - -	113·90	103·80	85·30	108·00	124·74	146·30	157·90	151·50
20 „ 30 „ - -	67·97	66·40	64·67	73·55	73·38	86·20	92·80	93·00
30 „ 40 „ - -	46·45	47·56	58·00	58·73	78·85	92·66	95·80	103·00
40 „ 50 „ - -	38·34	38·67	45·00	46·14	60·57	71·20	70·40	77·00
50 „ 60 „ - -	26·92	28·11	32·00	30·72	34·47	51·00	48·20	54·00
60 „ 70 „ - -	17·17	17·17	18·00	17·31	21·78	25·28	23·30	24·20
70 „ 80 „ - -	8·21	8·21	10·35	8·84	10·37	12·18	10·58	10·50
80 „ 90 „ - -	5·63	5·56	6·68	4·68	5·21	6·12	4·78	4·48
90 „ 00 „ - -		3·84	5·34	3·87	3·76	4·17	2·82	2·73

The

* Only I must observe that M. Carnot's superstructure of arithmetical conclusions rests on a treacherous basis; for his main argument proceeds from certain assumptions as to the ages of the population, and I have reason to believe that such assumptions are little warranted by existing knowledge. Death-rates at given ages, and expectations of life at given ages, are questions of proportion between the two quantities—how many at such ages are *living* and how many at such ages *die*? The latter element may generally be gathered from civil registers; but the former can only be got from a census of the population classified according to ages; and I am not aware that any such census had been made in France before the present century.

† M. Dupin concludes his paper in the following terms:—“L'allongement de la vie à toutes les époques de l'enfance, de l'adolescence, de la virilité, de l'âge mûr et de la vieillesse, pour les personnes de conformation pareille, voilà le grand fait établi par les comparaisons rigoureuses que nous venons de présenter. C'est le bienfait obtenu par les progrès des sciences et des arts appliqués au bien-être du genre humain, Formons des vœux pour que nos démonstrations mathématiques mettent un terme aux assertions erronées et desolantes, propagées par mille écrits et par mille déclamations qui s'appuient sur les mortalités prétendues croissantes par l'effet du malheur et de la misère, qui diminuent au lieu d'augmenter notre patrie.”—Comptes Rendus de l'Acad. vol. xxvii. p. 571.

‡ L'Union Médicale, 1855; and Rapport sur les Vaccinations pratiquées en France pendant l'année 1854. This Report, though relating to 1854, is but recently published, and was not received here till March 25, 1857.

The following are the terms in which the French Academy of Medicine reports its judgment on Dr. Bertillon's work, and on the controversy which occasioned it:—

“ De cette longue et laborieuse investigation il résulte que, de quelque manière qu'on interprète les documents anciens et nouveaux de la statistique, à la condition de n'abdiquer ni les lois de la logique ni celles de la science, on arrive à des conclusions écrasantes pour les adversaires de la vaccine en particulier, et en général pour les contempteurs sceptiques du progrès. Car ce n'est pas par l'examen d'un ou deux documents individuels, c'est par l'accord unanime de tous les documents, qu'il est démontré que, depuis le siècle passé, depuis l'époque qui a précédé immédiatement notre grande révolution, la mortalité s'est considérablement atténuée à toutes les périodes de la vie; que particulièrement de vingt à trente ans, âge auquel, d'après les anti-vaccinateurs, la variole, d'abord vaincue, exercerait sournoisement de mortelles représailles, le danger de mort a diminué d'environ un quart. Aujourd'hui, 1,000 citoyens de vingt à trente ans ne fournissent que 10 à 11 décès, tandis qu'autrefois le même nombre de sujets en donnait au moins 13 à 14. Et les autres âges sont beaucoup plus favorisés que celui-ci !

“ Enfin, bien que, pour l'armée et pour la ville de Paris, les documents soient insuffisants pour mesurer avec exactitude, même depuis 1820, la diminution de mortalité, ils suffisent pour affirmer qu'il n'y a eu nulle aggravation; tandis qu'au contraire des considérations puissantes démontrent pour Paris une tendance manifeste, dans un si court espace de temps, à la diminution des chances de mort, bien que le regrettable silence de la municipalité ne nous permette pas de dégager complètement cette tendance pour l'apprécier numériquement. Rien, par conséquent, absolument rien qui puisse motiver les excentriques et persévérantes assertions des détracteurs de la vaccine.

“ Si nous voulons résumer les causes qui les ont égarés, nous dirons que toutes leurs erreurs ont pour source commune l'ignorance des principes de la statistique et l'inexpérience de sa méthode, le manque complet de discussion et de critique, critique d'autant plus indispensable que les documents sont plus imparfaits. A chaque instant on les voit s'appuyer sur des hypothèses en contradiction formelle avec les conclusions bien connues de célèbres et nombreux travaux. On les voit prendre pour mesure de la mortalité moyenne d'une nation, ici la mortalité allégée des rentiers, ailleurs la mortalité aggravée des soldats. Plus loin, il confondent la table de survie avec la table de population, et tirent de l'une les conclusions que l'autre seule permettrait. N'ayant aucune notion des lois qui régissent les mouvements de population, ils prennent pour une calamité la diminution lente et progressive des naissances, bien que ce mouvement régulier suive la prolongation de la vie humaine, et détermine dans la nation la prédominance des âges producteurs. S'ils veulent la survie applicable à une ville dont la population est la plus mobile, la plus incessamment et profondément remuée dans toutes ses parties, ils se servent d'une méthode, qui suppose l'immobilité et la régularité absolue dans la succession des vivants et des mourants. Ils supposent stationnaire une population croissante; ils la supposent décroissante suivant les âges, quand elle croît d'un âge à l'autre.

“ Il ne leur suffit point de se jouer si audacieusement de la statistique; ils ne respectent pas davantage les simples lois du calcul. Ils raisonnent, avec des quantités qui ne sont vraies que relativement à d'autres, comme si elles étaient vraies absolument. Ailleurs, au contraire, quand un rapport seul peut les instruire du danger de mort, ils omettent de s'en informer. Et ce qui est plus étrange encore que tous ces contresens, que tous ces défis portés à la science, c'est l'aisance parfaite avec laquelle ils s'y abandonnent, ne paraissant pas se douter que ces matières aient pu être traitées avant eux; c'est sans discussion préalable qu'ils supposent non avenus les célèbres travaux des Malthus, des d'Ivernois, des Benoiston, des Villermé, des Quetelet, en sorte que ce qu'on peut faire de mieux en leur faveur est d'accuser leur instruction pour disculper la légèreté de leur procédés.”*

Thus much in answer to the question, whether the main facts of the case are such as M. Carnot pretends. A very slow increase, or possibly a decrease, of the French population at the present time seems indeed to be an admitted fact; and it is stated (I believe on the authority of official documents) that the standard of height for admission to the French army has of late years of necessity been reduced, because of the decreased stature of the general population; while nevertheless the proportion of conscripts found physically incapable of service has undergone a continuous increase.†

Be it so. Admit these allegations. Admit also every arithmetical conclusion, however contested, which M. Carnot founds on ambiguous fragments of imperfect local evidence. Admit every hypochondriacal presentiment—every assertion which M. Dupin and Dr. Bertillon and the French Academy of Medicine concurrently declare to consist in mere statistical error. And what then? Would any reasonable person proceed from these particulars to construct a universal theory (the first deduction from which must be that such particulars are general in Europe), never verifying his theory by any second instance, never looking for those imputed effects of that same cause in other lands where it operates? Should it not be a first impulse to ask, are these things so elsewhere? Do other countries suffer like this pitiable image of France? Is England beginning to be depopulated? Are its women becoming less fruitful? Does Sweden show a *déplacement de la mortalité*? Is its adult life now more precarious than 50 years back? In Geneva, where mortuary records have been kept for three centuries, are any such results reported? Is the re-vaccinated army of Prussia wasting away with a quadrupled mortality? Does Bavaria, among its conscripts for military service, show an increased proportion of incapables?

The most cursory examination of this kind might have convinced M. Carnot that, whether his arithmetic be right or wrong, his medical conclusions are untenable.

He might have read, for instance, in the report of the census of Great Britain in 1851, an announcement (1. p. 82) that “the most important result which the inquiry establishes is, the addition in half a century of 10,000,000 of people to the British population; that the increase of population in the half of this century nearly equals the increase in all preceding ages; and that the addition in the last 10 years of 2,300,000 to the inhabitants of these islands exceeds the increase in the last 50 years of the eighteenth century.”

Or,

Increase of population in Great Britain.

* Rapport sur les Vaccinations de 1854, pp. 66–9.

† It is beyond my present business even to question the truth of these assertions; much more, to investigate what, if they be true, may have been the real causes of the alleged deterioration and comparative sterility of the French people. The subject has been a good deal discussed in the periodical literature of the day; and there M. Carnot may easily learn that for his favourite facts there exist more reasonable explanations than his own.

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Or, so far as relates to the 19 years during which a general registration of births has existed in England, he might have learned that, with us, at least, there is no evidence of a failing fecundity; that is the early part of this period (1838—40) for every 1,000 women aged between 15 and 45 there were registered $133\frac{1}{2}$ living births, and in the latter part of the period (1851—6) for every 1,000 such women $144\frac{1}{2}$ living births.

Death-rates of different ages in Sweden.

ANNUAL MORTALITY to 1,000 PERSONS LIVING.

Ages.	21 Years (1755-75).	20 years (1776-95).	20 Years. (1821-40).	10 Years (1841-50).
0-5 - -	90.1	85.0	64.3	56.9
5-10 - -	14.2	13.6	7.6	7.8
10-15 - -	6.6	6.2	4.7	4.4
15-20 - -	7.6	7.0	4.9	4.8
20-30 - -	9.2	8.9	7.8	6.8
30-40 - -	12.2	11.6	11.8	9.8
40-50 - -	17.4	16.1	16.7	14.5
50-60 - -	26.4	23.9	26.0	23.6
60-70 - -	48.1	49.3	49.4	46.3
70-80 - -	102.3	104.1	112.9	102.8
80-90 - -	207.8	197.4	243.7	228.5
90 and upwards	394.1	351.3	396.4	375.8
All Ages - -	28.9	26.8	23.3	20.5

The figures which are put in larger type relate to that section of the population which has been born since the introduction of vaccination, and of which (persons under 30 in the fourth, and under 40 in the fifth column) the greatest part is undoubtedly vaccinated. Of persons 10 years older, especially in the last column, many are vaccinated; of persons still older, a diminished and diminishing proportion.

Survivance in Geneva at various Periods from 1560 to 1843.	Per-centage of those Born who reach 10 Years of Age.	Per-centage of those Living at 10 Years of Age who Survive to 40.
CITY of GENEVA:		
1560—1600 - - -	42	43
1601—1700 - - -	48	53
1701—1760 - - -	60	68
1761—1800 - - -	61	71
1801—1813 - - -	69	72
1814—1833 - - -	74	72
CITY and SUBURBS:		
1816—1830 - - -	74	74
CANTON:		
1838—1843 - - -	74	71

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England.

dition is not possible. But at least, in looking at the composition of a given number of deaths now in the previous century, it is easy, where one compares similar populations, to see that deaths in early adult life have not taken the place of those which formerly befell

Composition of 1,000 Deaths in London
at Two Different Periods.

AGES.	Bills of Mortality, 1728-43.	Registration of City of London, 1848-55.
0-5	455	375
5-10	36	42
10-20	31	42
20-30	76	63
30-40	91	80
40-50	93	90
50-60	82	92
60-70	62	100
Over 70	74	116

infancy. Thus, if I contrast Dr. Short's account* of 405,951 deaths within the bills of mortality of London for the years 1728-43 with an account† which I kept of 22,332 deaths registered within the City of London during the years 1848-55, I find (as to the annexed Table) that the two periods differ considerably as to the proportion which different ages contributed to every 1,000 deaths. In the former periods, persons aged 60 and upwards were only 136 per 1,000; in the latter period, were 216. In the former period, deaths under 40 years of age were 689 per 1,000; in the latter period, only 602. And of deaths at ages above 15, those between 15 and 45 constituted in the later period not (as in Paris) 50, but about 37 per cent. This argument, of course, is not nearly so good in kind as might be drawn from the divisional death-rates of a population classified according to age; but the latter material, as I have said, is inaccessible;‡ and I adduced the present argument, though unsatisfactory, chiefly because M. Carnot has used it in respect of the Parisian population; and I wish to notice,

And whatever fallacy belongs to the imperfect condition of vital statistics in France might have been avoided, if M. Carnot had but studied the admirable records of Sweden; where not only would he have found, in respect of that well-vaccinated country, no evidence of the "displacement of mortality" which he ascribes to vaccination, but would have seen how much better now than during last century are the chances of every period of life. In the annexed Table (for which I have to thank Dr. Farr) an abstract is given of the Swedish returns. You will observe that even in the penultimate period (within which the fatal cholera epidemic of 1834 killed 12,637 persons) the population at all ages under 30 years of age, consisting of course for the most part of vaccinated persons, showed a much less death-rate than the population of the like ages in the former century. And in the next period (1841-50) when vaccination would have affected at least all ages up to that of 40 years, the corresponding death-rates show an improvement on the earlier vicenniad 1821-40, and a still more striking improvement on the death-rates of the last century.

As regards the city and canton of Geneva, specially interesting for comparison because of the great length of time over which the records extend, M. D'Espine, with no controversial object, arrived some years ago at results which can afford no encouragement to M. Carnot; and the appended Table is part of one in which M. D'Espine has very compendiously expressed his conclusions. You will observe, that although in its first column it bears testimony to the diminished pressure of infantile disease, the mortality which has been saved to infancy and childhood shows no signs of having been displaced into the next following periods of life. On the contrary, while the per-cental chance at birth of living to 10 years of age has increased in Geneva within the last century from 60 to 74; the per-cental chance for those who complete 10 years, that they will continue living to the age of 40, has increased from 68 to 72.

The English population was never classified according to ages till the census of 1841; and therefore a similar comparison between its past and present con-

* "New Observations on City, Town, and Country Bills of Mortality," &c. By Thomas Short, M.D. London, 1750, p. 92.

† Report on the Sanitary Condition of the City of London for the year 1854-5, Table VI.

‡ The only approach to a standard of comparison is that very limited one furnished by the Tontines of 1774-8 and 1790; but this (besides being insecure from the smallness of its material) is made almost inapplicable for my present purpose by the fact that the nominees in these Tontines were selected—chiefly

notice, in illustration of the essentially local character of his facts (if facts they be) that the mortuary records of London and Paris would lead him to opposite conclusions.

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Similarly, when M. Carnot deplores (it is said, mistakenly) the enfeebled health of the French army, *infinitement moins capable que leurs devanciers de supporter les privations et les fatigues inséparables de la guerre*; and when another statistician of the same school alleges that the proportion of French conscripts declared physically unfit for military service has, since 1816, been an increasing one; how obvious the course, if one would understand such facts (assuming them for the moment to be facts) to inquire whether they belong only to France, or are common to many European countries. Such an inquiry would have led the alarmists to doubt the accuracy of their own local observations. It would have told them that in the Bavarian army,* during the period 1821-51, the per-centage of physically unavailable conscripts has not increased, but diminished, from $23\frac{1}{2}$ at the beginning of the period to $21\frac{3}{4}$ at its close: that in this army, vaccinated and re-vaccinated as it is, the death-rate for the years 1844-47 has been even better than that somewhat arbitrary standard of healthiness which M. Carnot adopts from Deparcieux's *select* lives of the last century; and that in the Belgian and Prussian armies, according to the same authority, the death-rates were little less favourable.

Military establishments.

The preceding evidence will have satisfied you, I think, that M. Carnot's assertions are such as he cannot substantiate. You have seen that, even as regards France, his fundamental statements are flatly contradicted; and that the sanitary statistics of France, if they were such as M. Carnot pretends, would bear no such particular reference to the subject of vaccination, nor be so corroborated by the statistics of other countries, as in any degree to justify his conclusions.

Yet let me beg you, before leaving the subject, to look at it in one other aspect. Although the accusers have not been very scrupulous about their arguments, still they have thought it necessary to enter into some detail as to the mode in which the world is to be depopulated, and as to the symptoms of that vaccination poisoning which they denounce. It is well that they have done so. The more detailed an inquiry, the more advantageous it becomes to truth; and those who are accustomed to the cross-examination of witnesses will not wonder that the traducers of vaccination have committed themselves to opposite details.†

Death-rates by particular diseases.

Whether

of course with reference to their chances of comfort and longevity; and to compare our *average* death-rates with the death-rates of a population so selected, would be to defeat the objects of comparison. Mr. Finlaison has kindly obliged me with his calculation of the Tontine death-rates, and I have embodied them in the subjoined table side by side with certain other death-rates for the same periods of life. For special comparison with the Tontine death-rates, I have inserted the death-rates of two populations of the present time, where circumstances operated in some respect equivalently to the selection which I have described. I have taken, first, the *death-rates of the provident classes* from materials given by Mr. Neison in his recent contributions to vital statistics; and secondly, the *death-rates of the population of the 63 healthiest registration districts of England and Wales*, as estimated by Dr. Farr. These populations—the former in respect of somewhat easier circumstances and better-regulated lives, the latter in respect of advantages of residence—may be considered as select populations, fairly comparable with Tontinists. I have also inserted in the Table the general (unselected) death-rates of England and Wales, as given by the Registrar General for the years 1845-54. I must, however, confess that the standard of comparison appears to me radically defective. The great difference between the death-rates of the two sexes of Tontinists shows, I think, one of two things: either that the population basis of these calculations has been too small for a trustworthy result, and that some fallacy affects the death-rate of one sex or the other; or else that circumstances, unknown to the present age, did really at the periods referred to, make that large difference between the death-rates of the sexes. In either case it would be unsafe to draw conclusions from the comparison; and therefore it is that the table is set here rather than inserted in the text. In the last part of the Table is set the mean rate for the two sexes in respect of each of the five populations compared, and in this of course the discrepancy is concealed. But I am not prepared to say that any trustworthy conclusion may be drawn from it:—

ANNUAL DEATH-RATE per 10,000 living at AGES and in POPULATIONS as below.

AGES.	MALES.					FEMALES.					MEAN.					AGES.
	Tontines of 1771-8.	Tontine of 1790.	Friendly Societies of Great Britain.	Sixty-three Healthy Districts of England, 1849-53.	England and Wales (Reg. Gen.) 1845-54.	Tontines of 1771-8.	Tontine of 1790.	Friendly Societies of Great Britain.	Sixty-three Healthy Districts of England, 1849-53.	England and Wales, (Reg. Gen.) 1845-54.	Tontines of 1771-8.	Tontine of 1790.	Friendly Societies of Great Britain.	Sixty-three Healthy Districts of England, 1849-53.	England and Wales (Reg. Gen.) 1845-54.	
15-25 -	111.467	118.634	61.9	69.1	83.3	83.149	84.268	66.5	76.5	86.3	97.308	101.451	64.2	72.8	84.8	15-25
25-35 -	117.302	118.683	75.5	81.8	101.5	101.254	85.299	75.1	89.4	108.3	109.278	101.991	75.3	85.7	104.9	25-35
35-45 -	139.351	130.520	93.9	93.8	130.9	114.116	92.283	92.8	99.8	129.3	126.883	114.901	93.4	96.4	130.1	35-45

* "Würdigung der Vortheile der Kuhpockenimpfung," von Dr. Reiter, p. 40; and "Die Vaccination und ihre neuesten Gegner," von Dr. Haesser, p. 32.

† "Under the mastick tree" and under the "holm tree" were the small but sufficient discrepancies of two famous accusers; and this case is recalled to one's mind, as one finds that the theories which charge vaccination with destructive results differ as to the diseases by which it kills. "Les maladies du pouton n'ont pas eu de part sensible à l'accroissement de la mortalité de la jeunesse," is the result of M. Carnot's arithmetic. "Le vaccin a corrodé les poutons," is among the impudent invectives of M. Verde de Lisle. To the former accuser, croup is among the diseases which have diminished; while to the latter (who will admit no gleam of hope for mankind) it is among those which are "presque généralisés par le vaccin."

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Whether these gentlemen agree or differ is, after all, of little importance. They are so ignorant of medicine, that what they accept or reject is a matter of no scientific moment. But the question whether vaccination, in rendering persons less susceptible of small-pox renders them more susceptible of any other disease, is one of pathological interest, and one which may reasonably be considered.

To a great extent it is already answered, and especially so in a practical sense. The preceding statistics having shown you for the present century frequent instances of large reduction in general death-rates, with improvements in the expectation of life at all ages, it becomes comparatively unimportant to consider whether this or that disease contributes more or less to the diminished total. But there are special classes of disease to which it is well to advert; because, respecting them, some random assertions have been made, that they, since the introduction of vaccination, have become more numerous.

Scrofula and fever.

I refer first to what are called *scrofulous affections*, including that terrible scourge of human life, pulmonary consumption, or phthisis; secondly, to *continued fevers*, and especially to that kind or variety (typhoid fever) in which certain glands of the intestinal canal undergo a characteristic inflammation.

Sources of fallacy in comparing past and present diseases.

It will be obvious to you that the comparison of present with past diseases is one extraordinarily liable to fallacy. Names of disease are constantly varying: not only because the language of physic changes with the general language of the country; but more especially because, as the anatomical and chemical knowledge of disease is extended, nomenclature becomes more precise, and maladies which had been lumped together under one undescriptive name get their several distinctive titles. Instead of troubling you with medical instances of this very notorious fact, I may remind you that zoology and botany and chemistry illustrate the same process. This may be seen in comparing our scientific lexicons with those of the last century, and observing that animals and plants, and chemical elements and compounds, have "increased since the practice of vaccination," simply because the study of nature has not stood still since the age of Linnæus, Buffon, and Scheele. Later science has added facts to their inventory, has recognised old affinities in another light, and broken into new parcels the former groups of premature classification. So it has been with diseases: our increased vocabulary has been in proportion to the great scientific progress of the last 30 years; it denotes that *more distinctive enumeration of disease by anatomical or chemical characters* which is due to the labour of Laennec and Louis, and Rokitsky and Bright, and innumerable others who have developed these studies of medicine.

Statistics of the subject.
London.

Therefore I cannot refer to statistics with entire facility. But, taking such as can be found, you will notice that all their evidence points one way.

GENERAL and Differential Annual Death-rates in London per 100,000 Living at Three Different Periods, during the 175 Years 1681-1855.

DATE.	From all Causes.	From Small-pox.	From Pulmonary Affection.		From Fevers.	From Strumous Diseases.
			Including Pneu-monia.	Exclusive of Pneu-monia.		
1681-90 - -	4,210	313.9	693	693	633	801
1746-55 - -	3,550	304.4	734	734	539	1,099
1846-55 - -	2,490	33.8	528	682	385	206

The two annexed tables (to which I have already referred) furnish the means of comparison as regards London. The former of them gives the abstract of Dr. Greenhow's investigation: the latter is the work of Dr. Farr. As you glance below at the names of disease transcribed from the old Bills of Mortality, and as you read the notes to Dr. Greenhow's table in the Appendix (p. 399) you will appreciate the difficulty to which I just referred. Both tables have been constructed with due regard to those sources of fallacy; and it seems impossible to examine their details without being satisfied on the matter in hand.

Fever.

First, with regard to fever:—Dr. Greenhow, throwing into one group all those deaths of the present day which might have been included under the old application of the word "fever" (counting scarlet fever, and inflammation of the brain, and inflammation of the lungs in this category), still finds that, even with this large addition, the so-called "fever" of the present day occasions only a death-rate of 385 per 100,000, whereas a century ago its death-rate was close on 539. And Dr. Farr, in commenting on the somewhat similar materials which he contributed to McCulloch's work, remarks, without reference to any controversial point, that "fever has progressively subsided since 1771;" and that the combined mortality of small-pox, measles, and scarlatina is now "only half as great as the mortality formerly occasioned by small-pox alone."

GENERAL and Differential Annual Death-Rates in London per 100,000 Living at Seven Different Periods during the 226 Years 1629-1854.

CAUSES OF DEATH.	BILLS OF MORTALITY.						Registration Returns (Dr. Guy).
	1629-35.	1660-79.*	1728-57.	1771-80.	1801-10.	1831-5.	1840-54.
Small-pox - - - -	180	417	426	502	204	83	40
Measles - - - -	16	47	37	48	94	86	58
Scarlet fever - - -	?	?	?	?	?	53	90
Fever - - - -	636	785	785	621	264	111	101
Spotted fever - - -	45	90					
Plague - - - -	125	1,235	—	—	—	—	—
Dysentery - - - -	221	894	50	17	1	1	9
Surfeit or Cholera -	63	148	1	?	?	135	78
Pleurisy - - - -	14	6	10	5	4	39	6
Asthma and tiskick -	?	?	112	85	89	136	45
Consumption - - -	1,021	1,255	905	1,121	716	567	323
King's evil (scrofula) -	14	19	5	5	?	3	12
Dropsy - - - -	146	349	218	225	131	133	59
Apoplexy and suddenly -	47	30	48	55	49	59	81
Palsy and Lethargy -	14	17	12	18	19	28	46
Old age, bedridden -	370	388	415	324	241	357	130
Casualties - - - -	65	76	85	70	40	57	77
Childbed and miscarriages -	80	100	43	47	32	43	19
Chrisomes, overlaid, convulsions, worms, teething, mold-shot head, dropsy on the head, inflammation of brain, rickets, liver-grown, canker, thrush, croup, hooping-cough -	1,681	1,591	1,827	1,682	789	625	1,314
Inflammation - - - -	?	?	10	31	101	307	
Unknown causes - - -	?	?	?	?	?	88	
Other diseases - - - -	253	565	211	144	146	289	
All Causes - - - -	5,000	8,000	5,200	5,000	2,920	3,200	2,488

So, again, says Dr. Greenhow, with scrofulous affections. Exclude phthisis from the comparison (because of the formerly imperfect means of recognising its presence), and the scrofulous death-rate per 100,000, which in 1681-90 was 801, and in 1746-55 was nearly 1,099, is now but 206; so that, looking to the middle of the last century, the golden age of the vaccino-phobists, we find a *scrofulous death-rate more than five times as great as our present one*. And then, trying by a different process to estimate the former fatality of phthisis—examining, namely, for the three periods compared what deaths have been attributed to diseases of the respiratory organs—we find that, even with the utmost amplification of this list (including pneumonia, which formerly may have been counted to “fever,” and including respiratory affections of infancy, which would formerly have been counted to “chrisomes,” and including similar affections of advanced life, which would formerly have been counted to “old age”), still the *pulmonary death-rate of the present time is seven per cent. lower than the pulmonary death-rate of 1746-55*. Dr. Farr’s conclusions quite confirm the tendency of Dr. Greenhow’s evidence; and he remarks, as the general result of his inquiry, that “the proportion of persons destroyed by consumption with other forms of scrofula has (except in the anomalous period 1771-80) progressively declined in London.”

Scrofula.
Consumption.

As regards more detailed statistical inquiries, such, namely, as depend on the minute examination of particular cases, it may be observed that there has never been adduced a tittle of evidence to show that vaccinated individuals suffer more than non-vaccinated individuals

Circumstantial inquiry in particular cases fatal to M. Carnot’s theory.

* That death-rate of 8 per cent., the average for London during the 20 years succeeding the Restoration, may have been in Mr. Macaulay’s mind when he wrote a beautiful passage in his history (end of Chapter III.) criticising the delusion “which leads men to overrate the happiness of preceding generations.” “It is now (he says) the fashion to place the golden age of England in times when noblemen were destitute of comforts the want of which would be intolerable to a modern footman; when farmers and shopkeepers breakfasted on loaves the very sight of which would raise a riot in a modern workhouse; when men died faster in the purest country air than they now die in the most pestilential lanes of our towns, and *when men died faster in the lanes of our towns than they now die on the coast of Guiana*.” According to M. Carnot there ought to have been very little natural small-pox in those days. What say our diarists of London life? In the pages of Pepys and Evelyn there are many references to small-pox; from 1660—when “in the midst of all this joy and jubilee, the Duke of Gloucester died of it in the prime of youth, and a prince of extraordinary promise”—to January 1695, when (the disease having already raged for two months, and the queen having died of it) “the deaths by small-pox increased to five hundred more than in the preceding week;” and perhaps the strongest expression occurs in the very middle of that period when other diseases were so fatal. In 1663 (Feb. 9) Pepys writes, “and among other things, if I have not already set it down, it hardly ever was remembered for such a season for the small-pox as these last two months have been; people being seen all up and down the streets newly come out after the small-pox.” It was in 1685 that Evelyn (as he relates “in bitterness of sorrow and reluctance of a tender parent”) lost his own daughter by the disease.

Appendix, No. 6. individuals from any ailment whatsoever. On the contrary, where such inquiries have been made, they have distinctly refuted the supposition.*

Summary of results
of detailed investi-
gation.

As soon as M. Carnot's assertions were made public, as soon as he had committed himself to a statement† that typhoid fever was to be considered as the vaccinal substitute for small-pox, there was something definite for the physicians of France to investigate. They proceeded to do so. They did not shelter themselves under any general arguments. They did not confine themselves to saying to M. Carnot, that where he had found a new disease there was really but a new name. They did not superciliously refer him to common text-books of medicine, from which he might learn what were the ravages of typhoid fever, under other names, long before the discovery of vaccination. But with a candour and humility which did them honour, they accepted the medical hint of their arithmetical opponent, and set to work on the subject. And with what result? Why, that as fast as facts could be collected, the facts refuted him ;‡ that the typhoid infection was observed not only to pay

* In the year 1814 Mr. Macgregor, then Surgeon to the Royal Military Asylum at Chelsea, published (Med. Chir. Transact. vol. V.) an account of observations which he had made in that establishment during the ten preceding years in order to ascertain "whether measles, hooping cough, and scarlet fever had been more fatal and severe in the children, male and female, that had undergone vaccination, than in those that had been subjected to the casual or inoculated small-pox." Of children in the latter category there had been 1550 ; among whom had occurred 420 cases of measles, hooping cough, and scarlet fever, leading to 19 deaths. Of children in the former category there had been 891 ; among whom there had been 239 cases of the same diseases, leading to 9 deaths. The fatality of these diseases, then, to such as they attacked was 1 in 22 among the variolated class ; 1 in 26½ among the vaccinated class ; so that what difference existed was in favour of the latter.

† In this doctrine M. Carnot has found two adherents, whose works require no distinctive notice ; viz., M. Ancelon, who has written "des transformations des fièvres essentielles dont le cowpox est la cause," and M. Bayard, who has communicated similar crudities to the Academy of Sciences. The following passage from the *Comptes Rendus* of this body (Feb. 10, 1851) may be conveniently quoted, as expressing in a succinct form those doctrines of which my text shows the refutation :—"M. Bayard, dans cette nouvelle note, présente une série de propositions se rattachant toutes plus ou moins directement à cette idée déjà soutenue par lui dans ses précédentes communications, que la maladie désignée sous le nom de fièvre typhoïde n'est qu'une variole interne attaquant les individus que la vaccine a préservés, dans leur jeune âge, de la variole avec éruption externe. De ces douze nouvelles propositions, nous nous contenterons de reproduire les deux suivantes. XI. La variole confluyente et la fièvre typhoïde ne sont, très-probablement, qu'une seule et même maladie, externe dans un cas, interne dans l'autre, produite par la combinaison du typhus et de la variole. XII. L'inoculation du virus varioleux dans l'enfance préserve le sujet inoculé des complications, souvent mortelles, dues à la combinaison de la variole avec les causes morbides intercurrentes."

‡ For instance, in the Report for 1852 of the Vaccination Board of the Department of the Rhone, Dr. Roy, of Lyons, writes as follows :—"Une jeune fille varioleuse avec taches ecchymotiques entrée au mois d'Octobre dans notre service, succomba dans les vingt-quatre heures qui suivirent son entrée. Trois jours après, deux malades convalescentes de fièvre typhoïde sont prises de variole : une d'elles a succombé. Nous avons observé deux cas de fièvre typhoïde chez des ouvrières qui portaient des cicatrices nombreuses de variole antérieure."

And again, the Report for 1853 of the same Board, besides other references, quotes these cases from Dr. Piérou :—"Dans une maison, les six personnes qui l'habitaient ont eu, en 1853, la fièvre typhoïde ; sur ce nombre, deux avaient eu antérieurement une variole confluyente, ce qui n'empêcha pas la fièvre typhoïde d'être aussi grave que chez les personnes vaccinées. Un homme de 48 ans, soignant son fils vacciné, atteint de fièvre typhoïde, et portant lui-même des traces de variole confluyente antérieure, a eu la même fièvre que son fils ; tandis que sa femme, bien vaccinée, en fut exempte, quoiqu'elle eût soigné son fils et son mari, passant les nuits près d'eux pendant près de deux mois. Enfin, M. Piérou cite encore deux femmes, avec cicatrices varioliques nombreuses, atteintes plus tard de la fièvre typhoïde."

Subjoined to the latter Report is a paper which had recently been communicated to the Académie de Médecine of Lyons, by Dr. Teissier, Physician of the Hôtel Dieu ; telling that among 170 cases of typhoid fever which, during the past eighteen months, had been under his treatment, there were 30 where the patient bore marks of previous small-pox ; and adding, that within the same period he had seen more than 20 illustrations of small-pox attacking persons who had previously had typhoid fever ; two of whom were at that moment still in his ward, having been seized with the former disease when just convalescing from the latter.

The Paris Academy, in its Report for 1852, speaks of interminable facts of the same sort, specifying only a few of them :—"M. Barth a vu, dans son service à l'hôpital Beaujon, quatre cas de fièvre typhoïde sur des sujets non vaccinés, et marqués de la petite vérole. Un seul est mort ; c'était justement le plus marqué. Et l'inverse, il a vu encore plus souvent la petite vérole après la fièvre typhoïde. . . . M. le Docteur Lasnon a raconté qu'appelé dans le cours d'une épidémie, pour voir quatre enfants de la même famille, il eut la douleur de voir périr les deux garçons, âgés de 25 à 26 ans ; les deux sœurs s'en tirèrent, mais elles ne se relevèrent de la petite vérole que pour mourir plus tard de la fièvre typhoïde. . . . Un honorable académicien a trouvé dans un seul rapport dix-sept cas de fièvre typhoïde, dont neuf sur des sujets qui avaient eu la variole naturelle."

In the *Gazette Médicale de Paris*, 1854 (p. 530), Dr. Thore writes a paper, in which, besides quoting similar cases from several other authorities, he details from his own experience, as follows : first, 3 cases of typhoid fever, sometimes of great severity, following small-pox in non-vaccinated persons aged from 19 to 51 ; and secondly, 6 cases of small-pox, modified and unmodified, following typhoid fever in vaccinated and non-vaccinated persons aged from 9 to 20. Dr. Thore appropriately quotes Stoll's information about fever in Vienna in the last century, to the effect that, during a period of 12 years, about two-fifths of all Vienna deaths were produced by it, and that it proved fatal to nearly one-seventh of all whom it attacked.

Professor Forget, of Strasburg, had published in 1852 (*Gaz. des Hôpit.* p. 79) an important memoir, discussing the question on general pathological grounds, and giving cases in support of his opinion. He institutes an extended comparison of the two diseases, as to their respective anatomical affinities and the nature of their morbid processes, and the symptoms (especially the relation of the fever to the local changes) of each. He argues that "l'apparence pustuleuse de la dothinentérie est exceptionnelle et ne constitue qu'une forme assez rare ;" and he concludes, "(1) que la comparaison entre les deux maladies n'est pas soutenable ; (2) que l'enterite folliculeuse ne préserve pas de la variole ; et (3) que l'une pouvant succéder immédiatement à l'autre et vice versa, c'est le comble de l'inconsequence que d'établir entre ces deux affections une solidarité que rien ne justifie."

A careful description by M. Blot, communicated to the Société de Biologie (*Gaz. Méd.* 1854, p. 731), illustrates this further point ; that when, rarely enough, small-pox does develop pustules along the intestinal

pay no special regard to the unvaccinated, but even to attack persons in the very hour of their emergence from small-pox; that, conversely, small-pox would attack others in their actual convalescence from typhoid fever; that to have had the one disease, or to have escaped it, made absolutely no difference to having the other disease or escaping it; susceptibility to the one infection standing in no discoverable relation towards susceptibility to the other, and vaccination having no more to do with typhoid fever than with any other casualty of life which befalls vaccinated and unvaccinated alike.

Apart from those demonstrations, a second great series of facts, observed for the last 50 years, is conclusive against M. Carnot's imagination.

When masses of vaccinated persons are exposed to the infection of small-pox, if some of them suffer, do they suffer typhoid fever or any intestinal ulceration, inflammation, or disturbance? Here is exactly M. Carnot's postulate, small-pox infection acting on the vaccinated body; and the result is among the most extensively and most accurately observed phenomena of clinical medicine. In it there is the utmost possible refutation of M. Carnot. On his showing, there should be typhoid fever. In fact, there is nothing like it. Under the happy influence of Jenner's discovery, the small-pox is mitigated, perhaps almost to nothing. A few pustules, rapidly drying up, may alone attest that the once dreadful enemy is working in vain against a protected body. Of typhoid fever, of intestinal complication, of any other like disturbance, there is literally not a trace. But, just in proportion as the pustules are few, just in proportion as the protectedness against small-pox has been all but complete, so, in diametrical contrast to M. Carnot's notion, the other sufferings of the patient will be slight, and his convalescence rapid.

It may further be observed, that investigations made in this country have established among the certainties of medicine that typhoid fever mainly depends on causes quite remote from the causes of small-pox. And in respect of those districts or institutions in France where this disease is said to decimate the inhabitants, I will venture to affirm, as confidently as if I had visited the localities, that any qualified person inquiring into the *diet and atmosphere* of such populations, especially into their drinking-water, drainage, and domestic arrangements for cleanliness and ventilation, would be able readily to explain from local circumstances, and almost as readily to obviate by local improvements, any such specific mortality as M. Carnot alleges to exist.

As regards the second class of diseases to which special reference has been made, the scrofulous or tubercular class, the pathological argument is at least equally applicable. The causes of such disease are radically different from the causes of small-pox. To talk of such diseases being the vaccinal varieties or introversions of small-pox, to talk of their promising to be developed in proportion as small-pox becomes suppressed, is simply to talk at random.

There are two scientific senses in which the word *scrofulous* is used; first (somewhat indefinitely) in reference to certain sub-acute and chronic *inflammations*, often of an ulcerative kind, which arise, generally with little or no exterior provocation, in various textures of feeble and ill-nourished persons; secondly and more strictly, in reference to a specific constitutional weakness, which more or less disqualifies the circulating juices of the body from ripening to their natural pattern, and disposes them to such modification of development as results in their partial solidification and concretion into *tubercles* of dead material.

Scrofula in the first-mentioned sense is not independent of hereditary influences; but its principal causes have to do with the mere keeping and feeding of the individual sufferer. Scientific experiments can produce it in the brute creation; and unintentional experiments on millions of mankind have shown, on an awful scale, how mere an index it is of bodily depression—how sadly it is the sequel of poverty and privation—how constantly it goes with grief and hunger and squalid uncleanness, with exhausting toil and monotonous imprisonment.

It would be difficult, therefore, to conceive against vaccination a charge more ludicrously inapplicable, than that it has tended to aggravate diseases which are essentially the diseases of debility. For if you compare the extreme degree in which natural small-pox weakens and exhausts those whom it refrains from killing, with the contrary and entire absence of such results among the ordinary effects of vaccination, you have in this comparison a measure of the important influence which Jenner's discovery has exerted—not in aggravating, but—in mitigating the diseases in question.

Scrofula—

canal, these differ essentially in their distribution and character from that affection of a specific glandular structure, which is characteristic of typhoid fever. It is remarkable, too, that in M. Blot's case not even M. Carnot could have regarded the intestinal pustules as *la variole détournée par le vaccine*: for never had patient been so little vaccinated: the intestines were those of a *fœtus*; the mother herself, not vaccinated, had had modified small-pox; and the intra-uterine child had thus contracted small-pox, died, and been expelled. In addition to an abundant variolous eruption on the skin there were great numbers of pustules in the stomach, and all along the small intestine at every part of its circumference.

In *Canstatt's Jahresbericht* for 1851 I read of a paper by Dr. Debourge (published in the *Brussels Journal de Médecine*, Nov. 1851) answering M. Carnot with the following illustration:—A village in M. Debourge's neighbourhood had been visited by typhoid fever so severely, that almost the whole population—especially that part which was between 20 and 40 years of age—had suffered. Four years afterwards, small-pox prevailed there (nearly the whole population being unvaccinated) and attacked and killed indiscriminately those who had, and those who had not, suffered from the typhoid infection.

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Second class of facts fatal to M. Carnot's theory.

What happens when vaccinated persons are exposed to variolous infection.

Sanitary experience of the real causes of typhoid fever.

Scrofulous affections.

What is meant by scrofula.

Scrofula without tubercles.

Its real causes.

Vaccination a powerful indirect influence against it.

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Scrofula with
tubercles.

Phthisis.

Its real causes.

Scrofula—in that second-mentioned and more definite sense which restricts it to pulmonary consumption and other tubercular affections—eminently tends to be an hereditary disease. In persons hereditarily predisposed to it, some circumstances will very much promote, other circumstances will very much impede, its manifestation. But the root of the disease lies beyond very immediate contact with exterior conditions. It lies in those *laws of development* under which the chemical changes of the body, like its growth of stature and of features, are made conformable to a particular parental type; it belongs to the family-likeness between parent and child; it forms part of a definite entail. So little does it stand in any apparent connection with vaccination, that on the contrary—it even shows marked preference for those very periods of life, when the protective influence of infantine vaccination has often partially become obliterated.

What then do those writers mean who talk of tubercular diseases being made more frequent by vaccination? Do they mean that vaccination *propagates* from one person to another the developmental peculiarity which I have described? They might as well say, it communicates a Roman nose or a landed estate. Do they mean that in persons or families there is evidence of an *inverse proportion* between small-pox and tubercular diseases? Nothing of the kind exists. Do they mean that such ingredients of the skin as constitute its susceptibility to small-pox are *transmutable* into those elements of blood and lymph which, in scrofulous persons, are blighted into the characteristic substance of tubercle? All known facts and analogies tell to the contrary. Or do they mean, comparatively speaking, that vaccination belongs to the *circumstances which promote*, and small-pox to the circumstances which impede, the manifestation of the hereditary tendency? Again I say, only let them read the history of small-pox. In respect of these tubercular affections, as of the mere scrofulous inflammations previously discussed, let them note that, among recognized developing conditions of both classes of disease, *impoverishing and depressing influences* hold, by common consent, the most considerable place; * that, so far as we know, it is only as an impoverishing and depressing influence that either small-pox or vaccination can be imagined to operate; that all writers on small-pox attest the frequency with which scrofulous affections follow in its train; and that in such measure as vaccination is less impoverishing and less depressing than small-pox, in just such measure does its substitution for small-pox act in prevention of scrofula.

Vaccination indirectly preventive of tubercular, as of non-tubercular, scrofula.†

Summary of results on the morbid liabilities of vaccinated persons.

So far, then, as regards properly-performed vaccination, there is absolutely no reason to believe or suspect that, in rendering persons less liable to contract small-pox, it renders them eventually more liable to contract other diseases. Neither in speculative pathology, nor in common practice, is there the slightest semblance of support for any such doctrine. It ranks with the old misgiving, that vaccination would make horns grow and cover the body with cow-hair. Those who would have believed the one may believe the other.

What does vaccination really do to the human body?

Is properly-performed vaccination, then, an absolutely inoffensive proceeding? Not at all, nor does it pretend to be so. The very meaning of the thing is, that it shall artificially and designedly produce a transient and trifling indisposition; that for some days the infant shall be uncomfortable with a sore arm and a slight irritation of the adjacent axillary glands, and a perceptible amount of general feverishness. Within the limits of this description, one child may be a little more, another a little less, inconvenienced: but those limits are rarely exceeded. And if it cannot strictly be said that the immediate effects of well-performed vaccination *never* exceed the intentions of the vaccinator, at least it may be affirmed that any permanent injury resulting from it is an accident barely known in the practice of surgery.

Persons

* Monsieur d'Espine, of Geneva, has attempted to measure, with some degree of statistic precision, the influence of poverty in producing certain diseases. He says:—"Les décès par vice scrofuleux forment le $\frac{21}{1000}$ des décès déterminés dans la mortalité générale, le $\frac{1}{1000}$ des décès des riches, et le $\frac{133}{1000}$ des décès des pauvres. La prédisposition scrofuleuse chez les pauvres est ici aussi frappante que l'influence préservatrice de l'aisance. Les décès par vice tuberculeux entrent pour les $\frac{103}{1000}$ dans les décès déterminés de la mortalité générale, tandis que chez les riches il n'y a que 68 décès pour 1,000 qui se rapportent aux tubercules; chez les pauvres, on en compte 233 pour 1,000. Ici encore on trouve une influence très prédisposante de la misère et une action préservatrice de l'aisance."—Annales d'Hygiène Publique, t. xxxviii.

† It deserves notice, that this indirect *prevention of scrofulous affections* was among Jenner's hopes when he announced the discovery of vaccination. In various passages of his writings (e. g. op. cit. pp. 60, 116, 181) he refers to the notorious frequency with which such affections were excited by small-pox; and he appeals to general consent as to inoculated small-pox often occasioning them. "In constitutions predisposed to scrofula, how frequently we see the inoculated small-pox rouse into activity that distressful malady. . . . Every practitioner in medicine who has extensively inoculated with the small-pox, or who has attended many of those who have had the distemper in the natural way, must acknowledge that he has frequently seen scrofulous affections, in some form or other, sometimes rather quickly, showing themselves after the recovery of the patients." It is worth while to remember that these charges were brought against the practice of small-pox inoculation long before the discovery of vaccination; and not only amid the frantic prejudices against its first introduction, but even to the end of the century, when certainly its dangers in this respect must have been greatly diminished by the improved methods of treating inoculated patients. In a pamphlet written between 1793 and 1798 earnestly in defence of inoculation (Advice to Parents on the Management of their Children in the Natural Small-pox and during Inoculation; Newark and London, n. d., p. 3), I find the following passage:—"The propriety of inoculation is confirmed as well by reason as experience; and though some unfavourable circumstances have happened in the hands of ignorant and illiterate persons; though repeated eruptions have given rise to the false report of patients having the disease a second time; though the *vis vitæ* of some whose constitutions were not very strong, and the proper medicines through a want of skill not duly proportioned, has been injured; though persons with weak lungs have been thrown into pulmonic complaints; yet these contingencies are by no means to be charged to the method itself."

Persons hostile to vaccination allege against it, that it produces eruptions on the skin and glandular swellings: and others, not unfavourable to the practice, doubt whether this may not to some extent (and especially as regards unhealthily-predisposed scrofulous children) be a true allegation.

Vaccination might afford to bear these imputations. For, to what do they amount? Were they ever so true, the alleged evil, even to the sufferer, would be little in comparison with his gain; and the total amount of such evils, compared to the social advantages of vaccination, would, literally speaking, be too small to appreciate.

But, in fact, the imputation is—at least generally—erroneous. There is in it again that common fallacy of calling whatever happens to come after an event its effect. *Propter, quia post.* The infant is commonly vaccinated at three or four months of age. Thus whatever physical or moral evils belong to human life are very likely to have been preceded by vaccination; and it is not extraordinary that, especially by ignorant persons, this operation should often be charged with producing incredible results. When you consider, too, that the few months after vaccination include events which are very critical to infant life, you will see what frequent room there must be for misconception. Even to the healthiest and best cared for of children, weaning and teething are not perfectly safe and comfortable processes; to delicate and ill-nurtured children they are often fatal; to vast numbers they occasion, sometimes during many months, distressing or alarming symptoms. Such symptoms, I need hardly tell you, affect both vaccinated and unvaccinated. They have been known as incidental to infancy from periods long anterior to Jenner's existence. Now, an extremely frequent one of such symptoms is an inflammation of skin (known by the technical name of *eczema infantile*) producing on the child's head and face, or on other—perhaps many or most—parts of the body a dense eruption of little pimples, which presently convert into an itching and discharging surface so much of the skin as they occupy: and since irritations of the skin are peculiarly apt to propagate themselves in the direction of the return-current of the circulation of blood to certain organs—the so-called *lymphatic or absorbent glands*—which are subsidiary to this circulation, so it very commonly happens that more or less irritation and swelling of these glands will accompany that eczematous eruption; and that, for instance, the child who has the eruption about its head and face (which are among the most usual seats of the unsightly disease) will often be still further disfigured by glandular swellings in the neck. Though I have spoken of this infantile complaint as incident to the time of teething and weaning, yet in fact it may arise at earlier periods of life, even within a few weeks of birth, and, of course, before vaccination as well as after it. Indeed, frequently it is a reason for which vaccination is postponed; and perhaps I can give you no readier means of estimating how little vaccination has to do with its occurrence, than by telling you, first, that before the discovery of vaccination small-pox inoculation was charged with producing it; and, secondly, that in 1714, when small-pox inoculation was yet unknown in England, Dr. Daniel Turner* expressed himself in the following terms: "Among diseases of infants and young children scarce any attends more frequently than pustulary or scabby eruptions in several parts of their bodies, as in the breech, but more especially their foreheads, brows, and other parts of the face, which we find oftentimes overrun with dry and crusty scabs."

The circumstances under which both infantile eczema and glandular swellings arise are familiarly known to the medical profession. To say that properly performed vaccination can have *directly* to do with them, that it can directly cause general eczema, or directly affect any glands but those which it is intended and expected to affect, would be an assertion not warranted either by practical experience or by any pathological probability. To say that *indirectly* it may do so, that, in the very few instances where it produces excessive results, the disturbance thus occasioned may, by depressing or fevering the child, temporarily assist or excite other causes of disturbance, that, under such very exceptional circumstances, it may for the time of its operation predispose the child to this complaint and to that, may excite the scrofulous child to show its scrofula, and the eczematous child to show its eczema, these are assertions which may or may not be true; which are more easily made than either established or refuted; but which, if admitted in their utmost scope, really allege against vaccination nothing which might not as practically be alleged against a cold in the head, a cut finger, an undigested meal, or any other one of the thousand minor accidents of everyday life.

So much for what has been alleged against properly performed vaccination, against such vaccination as alone ought to prevail in any country where the State requires its performance. So much for the drawbacks which have falsely been said to detract from its inestimable advantages, and the dangers which, with almost equal falsehood, have been said to attend its performance.

It is less easy and less necessary to dispose of what may be said against ill performed vaccination; understanding in this phrase not merely such vaccination as is done with an unskilful hand, for commonly the worst effect of clumsiness is only that the operation fails; but especially referring to such vaccination as is done without due inquiry into *the health of the child* to be vaccinated, or without due care for *the quality of lymph* to be employed.

If

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Does vaccination cause cutaneous eruptions and glandular swellings?

Circumstances under which these disorders occur.

Their relation, direct and indirect, to vaccination.

Ill-performed vaccination.

* Treatise on Diseases of the Skin, p. 44, where the references given by Turner extend back to Galen.

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Extreme necessity
for carefulness in
vaccination ;

especially as to
choice of lymph.

Can accidental
infections occur in
vaccination ?

Opportunity of
testing it ought in
fact never to occur.

Vaccine lymph from
persons suffering
small-pox.

If local scandals have arisen against vaccination, and if some prejudices against it seem to have in them a show of reason, those are the sources from which such serious evils have come. All that belongs to the mere manual trick of vaccination is learnt from a minute's teaching and an hour's practice ; but not so easily the philosophy of the procedure, or the precautions which are requisite to make it harmless and useful. From Jenner onward, all great masters of vaccination have urged that its merits will always appear proportionate to the merits of its performers ; that if sickly children are vaccinated without due regard to their actual condition of health, children breeding other disorders, children having skin disease, children teething, and the like ; or if children, healthy or unhealthy, are vaccinated with improper material, the results must be at least unsatisfactory, and possibly dangerous. And all competent persons accordingly recognise that one who would vaccinate must thoroughly study these things.

Especially as regards the quality of vaccine lymph, the careless or uneducated vaccinator is using a dangerous weapon. It is only during part of the course of a vaccine vesicle that its lymph is suitable for further vaccinations ; for after a given moment, at which the contents of the vesicle possess their maximum of simple contagiousness, they tend more and more towards the quality of common inflammatory products ; and matter now taken from the vesicle is no longer the simple agent of a specific infection, but both has less efficiency for its real purpose, and is specially able to produce other undesired results. A danger of somewhat similar kind is that of taking lymph from vesicles which already have been accidentally ruptured, or where from any other cause, local or constitutional, their specific fluid is likely to have been modified by common irritative processes. Still more critical changes occur in lymph when removed from the body, unless appropriate means be taken to preserve it ; for, under the influence of air and moisture, it tends, like other dead organic matter, to putrid decomposition ; and inoculation with it, when thus changing, can hardly be more useful or less dangerous than a casual scratch inflicted in the dissecting-room. According to the usual practice of vaccination, error is less likely to be committed in this particular than in the one first mentioned ; for, when the operation is not performed from arm to arm, use is very generally made of lancets or ivory points on which lymph has been allowed to dry. Under this system (at least in our climate) the matter is almost secure from change ; and there is little room for such accidents as might arise from failure in those delicate procedures by which lymph is sometimes kept moist for use. But the danger of taking matter from irritated vesicles, and from vesicles at too advanced a period of their course, is one which circumstances render frequent ; and there is reason to believe that, in at least a very large proportion of those cases where abnormal effects have resulted from so-called vaccination, it has been the employment of this ambiguous irritative matter which has occasioned the mischief and scandal.

Suspensions are sometimes expressed that a slovenly vaccinator, careless in his choice of lymph, may thus communicate to one child the constitutional or local diseases of another. If this were true, it were nothing against vaccination. It is no argument against bread, that alum constipates the bowels ; still less it is an argument against quinine, that some drunken shop-boy may give one strychnia instead of it. And, without intending disrespect to gentlemen whose opinions on this point may be less decided than my own, I must say that I believe it to be utterly impossible, except under circumstances of gross and punishable misconduct, for any other infection than that of cow-pox to be communicated in what pretends to be the performance of vaccination. A vaccinator must forget his duty in more than one particular ; he must be indifferent both to the feelings of others, and to the social progress of the great good which he claims to administer, if he affronts the natural antipathies of those who bring their children to be vaccinated, by drawing his lymph for vaccination from the vesicles of diseased subjects. And, practically speaking, I can conceive no circumstances in this country which would justify a departure from the rule (recognised by the medical profession as unreservedly as it is desired by the public), that lymph be taken only from healthy subjects.

But, supposing that, in breach of this rule, lymph be taken from the Jennerian vesicle on the arm of a subject suffering constitutional disease ; what then ? *On the assumption only that it be a true Jennerian vesicle at the proper period of its development*, there are cogent reasons for believing that such vaccination can produce none but normal results.

There is one simple mass of experience, which, to my mind, seems conclusive. It has been proved on a large scale that vaccine lymph, taken from persons actually suffering small-pox, conveys to those who are vaccinated with it no other than the vaccine infection. This most remarkable truth has been established, I say, on a large scale ; for, not once or twice, but at least hundreds of times, something to the following effect has occurred. A patient has been vaccinated a little too late for protection. He had previously been exposed to an atmosphere infected with small-pox. Warned of his danger he has had recourse to vaccination when already small-pox was latent in his system ; and (under a law which expresses the intimate affinity of these two agents) the operation of the inhaled variolous contagion, and the operation of the inoculated vaccine contagion, have proceeded simultaneously on his person ; the former producing the general disturbance and general eruption of small-pox ; the latter producing, at the vaccinated spots, characteristic Jennerian vesicles. And with the lymph of these vesicles, again and again, successful vaccination has been performed. Again and again it has been shown that such lymph is capable only of communicating the Jennerian infection.

Since

Since then it is a quite unquestionable certainty that, even when the system is drenched with that subtlest infection of small-pox, the Jennerian vesicle preserves its own contagion pure and isolated, the argument may reasonably be extended. And, even if there were no evidence in relation to other diseases, this analogy would have rendered it eminently improbable that any, the most infectious, of their number could admix its contagion with the specific products of cow-pox. Indeed, so definitely and so constantly characterised are those local changes which different morbid poisons severally and specifically produce, that to say of a given phenomenon "this is a typical Jennerian vesicle" is, I believe, tantamount to saying "this is a vesicle, which only one unmodified influence can produce, which no second influence can concur in producing, and in the contagion of which no second principle of infection can possibly reside."

Turning, however, from these general considerations, I may inform you that the diseases which it has been suspected that vaccination might communicate have chiefly been scrofulous and syphilitic complaints, and various eruptions of the skin. In all but a very limited number of these cases it may be conclusively answered that the suspected mischief is physically impossible. Scrofula, for instance, and most skin diseases, even when, for experiment, their specific discharges and other products are deliberately inoculated on the healthy, are absolutely incommunicable by contagion; and it is inconceivable that the vaccine lymph, even if it could include these products, would alter the essential condition of their nature. Of some others among the diseases referred to, it may no doubt be admitted that certain of their specific products are infectious; but then again comes the question (which is already by anticipation almost disposed of) whether the constitutional existence of such diseases can qualify the contents *without modifying the characteristic development* of a true Jennerian vesicle.

Experiment, where it has been deliberately addressed to the solution of this question, has invariably answered *No*; and such experiment is worth more than many arguments.

The early reports* of the French Academy contain numerous particulars on this interesting subject; but observations on the largest scale appear to have been made by M. Taupin during his residence as medical officer in the Paris Hospital for Sick Children; and Messieurs Blanche and Guersont, physician and surgeon to this Institution, having occasion to discuss the general question, have included an account of M. Taupin's experiments in a passage which altogether is of so much importance that I transcribe it at length from their paper.

"Le virus vaccin ne paraît pas s'allier avec d'autres virus: lorsqu'on inocule un mélange de virus vaccin et de varioleux, on n'a qu'une de ces maladies, ou, si elles se développent toutes les deux ensemble, elles marchent chacune séparément avec le caractère qui lui est propre. Dans un très-grand nombre d'expériences tentées par le comité de vaccine ou par ses correspondants, on a pris du vaccin sur des pustules vaccinales développées à dessein au milieu de dartres, d'ulcères scrofuloux, de teigne favus, de vésicules de gale: on n'a remarqué que la vaccine sans aucun mélange de gale ou d'autres maladies. De nombreuses expériences sur ce sujet ont été répétées par le Docteur Taupin, à l'Hôpital des Enfants Malades. Nous empruntons ce qui suit à un mémoire inédit sur la vaccine, et qu'il a eu l'obligeance de nous communiquer. Pendant les quatre années qu'il a passées à cet hôpital, il a, sous les yeux des chefs de service, vacciné plus de deux mille sujets placés dans des conditions différentes d'âge, de santé, &c.; il a suivi et noté avec soin le résultat de l'inoculation, et il s'est surtout attaché à observer quelle modification les diverses maladies pouvaient faire éprouver à la vaccine, et quelle influence celle-ci pouvait exercer sur elles à son tour. Il a pu observer que le vaccin recueilli chez des enfants atteints de maladies aiguës ou chroniques, de fièvres essentielles, affection typhoïde, fièvres éruptives, de phlegmasies thoraciques, cérébrales, abdominales, de névroses, telles que chorée, hystérie, épilepsie, &c., était tout aussi actif que s'il eût été emprunté à des enfants bien portants; qu'il donnait lieu à une vaccine tout aussi abondante et régulière, et qui préservait tout aussi efficacement

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Extension of this analogy.

Maladies which are alleged to have been communicated by vaccination.

Experiments on the subject.

M. Taupin.

* Rapports présentés à M. le Ministre de l'Intérieur par l'Académie Royale de Médecine sur les Vaccinations pratiquées en France. From four of these Reports I extract the following paragraphs:—(Rapport 1808-9, pp. 54, 55.) "M. Pellieux, médecin à Baugency, nous a paru avoir fait l'expérience la plus concluante en inoculant le vaccin d'un sujet varioleux à vingt-trois sujets qui ont eu simplement la vaccine. . . . Des sujets dartreux, galeux, teigneux, vénériens, scrofuloux, ont également fourni à quelques praticiens de la matière vaccinale, dont l'inoculation a produit son effet ordinaire sans donner la moindre marque de la maladie dont les enfans étaient atteints. (Rapport 1821-22, p. 41.) "Quelques personnes peu éclairées répugnent encore à faire vacciner leurs enfans parcequ'elles supposent que les maladies des individus qui fournissent la matière, peuvent se transmettre par l'intermédiaire de la vaccine aux sujets sur lesquels on l'inocule. Cette crainte, détruite dans nos premières expériences et toujours combattue depuis cette époque, l'a été de nouveau par plusieurs de nos correspondans. Ainsi M. Rochot, médecin à Seurre, a vacciné dans un village du département de la Côte d'Or un enfant de six mois, dont la mère était atteinte du mal vénérien, et qui lui même avait quelques pustules au front. Il inocula le vaccin de cet enfant à plusieurs autres sur lesquels la vaccine se développa sans aucune complication d'affection syphilitique. M. Debar, médecin à Rue, a fait la même expérience, et avec le même succès. M. Voisin, officier de santé à Solignac, a inoculé le vaccin d'un sujet galeux sans donner la gale. Enfin, M. Labesque a inoculé quatre personnes avec du vaccin provenant d'un sujet qui était en pleine suppuration de petite vérole et la vaccine s'est développée seule." (Rapport 1829, p. 15.) "On sait depuis longtemps que le virus vaccine ne se charge d'aucun principe contagieux. Cette année plusieurs médecins, parmi lesquels se trouve M. Boucher de Versailles, l'ont inoculé après l'avoir puisé chez des varioleux qui avaient à la fois la variole et la vaccine, et n'ont donné que cette dernière maladie." (Rapport 1834, p. 45.) Le virus vaccin ne communique et ne développe que la vaccine.

† Dictionnaire de Médecine (seconde édition) art. Vaccine.

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efficacement de la variole ; et ce qu'il n'importait pas moins d'établir par un nombre considérable d'observations, c'est que le virus ne transmettait aucune maladie, soit aigue, soit chronique, contagieuse ou non contagieuse. Un grand nombre d'enfants atteints de gale, de scarlatine, de rougeole, de varicelle, de varioloïde et de variole, ont fourni un vaccin qui n'a jamais communiqué aucune de ces maladies contagieuses. Il en a été de même pour le vaccin pris sur des sujets atteints de rachitis, de scrofules, de syphilis, de tubercules, d'éruptions chroniques du cuir chevelu, de dartres, &c. Dans aucun cas, nous y insistons à dessein, le virus n'a rien communiqué que la vaccine toute seule. Loin de nous l'idée de conclure de cette innocuité qu'on doit employer indifféremment du vaccin pris sur des sujets sains ou malades ; mais nous voulions rapporter ces faits bien avérés pour faire justice de ce préjugé qui attribue à du vaccin malsain les maladies qui surviennent quelquefois chez le sujets vaccinés, longtemps même après l'inoculation."

I am not aware of any counter experiments suggesting different conclusions to those which are expressed and justified in the preceding passage. They assert for vaccine lymph the principle which Dr. Mead a century ago asserted for the virus of small-pox inoculation:—"it is more material into what kind of body it be infused, than out of what it be taken."* Indeed, in the whole list of diseases, syphilis is the only one to which serious suspicion could attach ; and, in regard to its communicability by the lymph of a true Jennerian vesicle, various other observers confirm the accuracy of M. Taupin's results.†

Experiments of
Professor Sigmund
and Dr. Friedinger.

Moreover, Professor Sigmund of Vienna (whose researches on everything relating to the inoculation of syphilis have been on a very large scale) has added to M. Taupin's results one, which, quite in a different manner, is equally against the possible invaccination of syphilis. In an official report on the division of the hospital over which he presides (*Aerztlicher Bericht des Allgem. Krankenhauses ; Wien, 1855*) he relates experiments to show that syphilis in its inoculable form prevents, within the sphere of its infection, the simultaneous formation of a vaccine vesicle. The discharge of chancre (in which form alone syphilis is universally recognised to be inoculable) has been designedly mixed, as by nature it never could be mixed, with ordinary vaccine lymph ; and the insertion of this compound poison in the skin has been followed only by the ordinary local results of syphilitic infection. No Jennerian vesicle has been formed ; no signs have existed of any possible combination of the two infections. Dr. Friedinger, who conducted these important experiments in Professor Sigmund's wards, and under his observation, has also communicated their result to the Society of Surgeons at Vienna.‡

Peculiar source of
fallacy in cases of
alleged invaccina-
tion of syphilis.

It is unquestionable, however, that cases are recorded in which the lookers-on (sometimes including a medical practitioner) have believed syphilis to have been communicated by vaccination. A moment's reflection suggests, that in such cases there must generally be sources of fallacy, which render them, in contrast with experimental results, almost valueless for instruction. When a child is born with the heritage of syphilis (a very frequent incident, if its parents have been suffering from that infection) the characteristic symptoms commonly do not appear till some weeks after birth ; and then the scandal discloses itself. Now, among persons with any sense of shame, the knowledge that one had transmitted syphilis to one's child would always be a sore subject. There would be strong temptations to employ false pretexts. Not only would parents often conjointly wish to disguise from their medical attendant, or from members of their household, the real explanation of the child's ailment ; but also, not unfrequently, one parent would wish to conceal from the other that the origin of the disease had been a conjugal infidelity. In respect even of unmarried people, every surgeon knows what utterly false, far-fetched, and absurd explanations are given of syphilitic symptoms, primary and secondary ; and it requires little experience to imagine how much more pertinacious will be the demand for excuses, and how much

* It deserves mention that these fears about the possible transfer of some unintended contagion belonged to the days of small-pox inoculation, and were then much discussed. In Kirkpatrick's *Analysis of Inoculation*, mention is made of a case where he tried, with no ill effect, the inoculation of small-pox matter from a syphilitic patient. Dr. Mead (Chap. 5) writes of those who, "infected with an incurable itch of writing and taking great pleasure in contradicting others to whom they bear envy, . . . still go on to terrify us by saying that there is danger lest, together with the small-pox, some other infection inherent in the blood and humours of the sick person should be transmitted into the sound body, . . . and such perhaps are scrofulous swellings and the venereal disease. Yet I can hardly believe that it ever happens that the seed of one distemper should bring along with it mixed the procreative matter of another of a nature quite different from it. . . . It is in my opinion more material into what kind of body the venom be infused than out of what it be taken." It is remarkable, too, that the first opponent of vaccination (Moseley, *op. cit.* xi.) discusses this point—not in reference to vaccination (against which it had not then been raised) but in reference to small-pox inoculation:—"Suppose a subject in the small-pox to have inveterate scurvy, scrofula, itch, syphilitic affection, or consumption, certainly no person ought to take matter from such a person for inoculation. But it might be done with as much safety as if none of these disorders were present. Peculiar circumstances, which I had no share in creating, have rendered me acquainted with some of these facts, and accident the others."

† Dr. Heymann (*Henke's Zeitsch.* 1856, p. 195) quotes some experiments by Dr. Schreier of Ratisbon which are to the same effect:—"Zwei in hohem Grade syphilitische Kinder geimpft und aus den vollkommen entwickelten Impfblattern die klare Pockenlymphe auf gesunde Kinder übertragen, was nicht den geringsten Nachtheil für die Geimpften zur Folge hatte ;" and he gives some remarkable observations made by himself at Java. Children having scrofula, syphilis, itch, the endemic frambæsia, and other complaints, were used, indifferently with others, as sources of vaccine lymph ; and no evidence ever appeared of any disease being thus communicated. This, he says, was especially observable in vaccination performed on the generally clean-skinned and constitutionally sound Chinese, from the Javans, who were so often the opposite.

‡ *Abhandl. der Gesellschaft der Aerzte zu Wien, 1854-5.*

much more active the supply of falsehood, under the complicated circumstances of connubial syphilis. Accordingly it is matter for surprise, that vaccination has not almost generally been pitched upon by persons in search of an apology for their syphilitic children. But in truth even such allegations against it have been few; and their paucity (assuming them all to have been made in good faith) would be a strong reason for regarding them with mistrust; * for surely if syphilis could be diffused by the vaccine lymph of children with an hereditary taint of that disease, this possibility must long ago have been made evident on a scale far too considerable for question.†

Among the scanty number of recorded cases in which such allegations have been made, there are, however, some in which, so far as I can judge, it seems almost certain that a person pretending to vaccinate did really effect a syphilitic inoculation. Properly to estimate these grievous instances of malpractice, two considerations must be adverted to: First, to the already quoted negative results obtained by Taupin and many other observers in their experimental inoculations of lymph from the true Jennerian vesicles of syphilitic children; secondly, to the fact that secondary syphilis itself is very possibly not communicable even by direct inoculation of matter from the ulcers and eruptions which it occasions; for many of the ablest experimenters in Europe declare, that in hundreds of trials they have never once succeeded in thus conveying from person to person the slightest infection of syphilis. And, regard being had to these considerations, it becomes almost certain that, in the cases referred to, the matter of chancres, the matter of primary syphilis, was used instead of vaccine lymph by the vaccinator, a mistake (however it may have occurred) of so gross and criminal a nature that the medical profession would feel no sympathy for the person through whose neglect or incompetence it happened.

Real cases of inoculation of syphilis in pretended vaccination have arisen in a different manner.

Other illustrations of culpable malpractice in vaccination, though rare, are not unknown. In the French Report (which has just reached us) on the vaccinations of 1854, mention is made of an outbreak of small-pox due to the unintentional employment of variolous matter, instead of vaccine lymph, for inoculation. And I have been informed that a grievous instance of the same kind, leading to not inconsiderable loss of life, recently occurred in this country.

Cases where small-pox matter has been unintentionally used in vaccination.

But in coming to cases of this description, there is no longer question of the merits of vaccination. If recorded instances of the kind, instead of being so few that you may count them on your fingers, were of innumerable frequency, they would make no argument against vaccination. Only they would, if possible, render more obvious than it is, the expediency and duty of providing that this great self-defence of nations against pestilence be not ignorantly and recklessly administered.

Here indeed is the whole gist of the matter. Earlier parts of this letter have shown that by vaccination, properly administered, the once enormous fatality of small-pox may be reduced almost to nothing. The present section justifies a conclusion, that against this vast gain there is no loss to count. Of the various alleged drawbacks to such great advantages the present state of medical knowledge recognises no single trace. Jenner's discovery, properly utilized, has been a pure blessing to mankind, an unmixed addition to the strength and happiness of nations.

General result.

To say of vaccination that it has sometimes been ill administered; to say that, under pretext of its administration, harm has sometimes been given instead of good, poison instead of antidote, is to speak, not against it, but, whether rightly or wrongly, against its administrators.

The vaccinations of Europe are now counted annually by millions. It may be vain to hope that every lancet shall be used with equal skill and equal carefulness, or that all populations shall be equally anxious to render those operations successful; but Medicine at least has contributed her share in showing that, subject to these conditions, small-pox need cause no further fear, nor its antidote be accepted with mistrust.

* Medical sources of fallacy are really too numerous for enumeration. But there is one against which, in my opinion, peculiar caution is required. I have personally reason to know that a simple surgical incision, on a child having latent in it the taint of hereditary syphilis, may become the seat of ulceration, which will present the ordinary characters and require the specific treatment of a secondary syphilitic sore. Some years ago I performed on a little boy, having no apparent ill health, a very trifling surgical operation, that for phimosis. In a few days the incision was, as is usual, all but well. In a few more it had begun to ulcerate. For some weeks there continued in the part an indolent inflammatory process, with considerable swelling, and slow but progressive ulceration. A variety of treatment failed to do good. At length a suspicion occurred to my mind which led me to prescribe iodide of potassium. Within eight-and-forty hours the wound had thoroughly changed its character, every reason for alarm was gone; and within a few days complete healing was accomplished. I now learnt that the child had been born with a strong hereditary taint, and had, long before the operation, required constitutional treatment on account of the usual symptoms of infantine syphilis. I believe, also, but here it is easier to be deceived, that I have seen the same constitutional influence modify a primary syphilitic sore (contracted by an adult already suffering from secondary syphilis) and convert it, at its period of repair, into what had all the characters of secondary syphilitic ulceration. At least I have seen such a sore, after months of unsuccessful treatment, change its character in a few hours, and rapidly advance to healing under the use of iodide of potassium. Now, what certainly happened in the first case with the clean cut of a surgical knife, and probably in the second case with a sore which had been the seat of a specific infection, might, I presume, happen at the vaccine punctures of a child having latent constitutional syphilis. Under the operation of this constitutional taint, they, or one of them, might become the seat of secondary syphilitic ulceration, and greatly perplex any observer in ignorance of the real cause; especially, of course, if the parents were endeavouring to disguise the previous facts of the case.

† Dr. Heim (op. cit. p. 613) observes that an universal infection (allgemeine Landesseuche) of scrofula must very long since have occurred if this disease could have been communicated by vaccination; and, he adds, that perhaps it would not have been much better with the diffusion of secondary syphilis. Dr. Heim is among those who have experimented on the subject; and his results accorded with M. Taupin's conclusions as to the non-communicability of syphilis by the lymph of a Jennerian vesicle.

APPENDIX.

(A.)

EVIDENCE given before a Committee of the House of Commons, 22nd March 1802, by
Dr. Jenner.

My inquiry into the nature of the cow-pox commenced upwards of 25 years ago. My attention to this singular disease was first excited by observing that among those whom in the country I was frequently called upon to inoculate, many resisted every effort to give them the small-pox. These patients I found had undergone a disease they called cow-pox, contracted by milking cows affected with a peculiar eruption on their teats. On inquiry, it appeared that it had been known among the dairies time immemorial, and that a vague opinion prevailed that it was a preventive of the small-pox. This opinion I found was comparatively new among them; for all the older farmers declared they had no such idea in their early days; a circumstance that seemed easily to be accounted for, from my knowing that the common people were very rarely inoculated for the small-pox till that practice was rendered general by the improved method introduced by the Suttons, so that the working people in the dairies were seldom put to the test of the preventive powers of the cow-pox.

In the course of the investigation of this subject, which, like all others of a complex and intricate nature, presented many difficulties, I found that some of those *who seemed to have undergone the cow-pox*, nevertheless, on inoculation with the small-pox, felt its influence just the same as if no disease had been communicated to them by the cow. This occurrence led me to make inquiry among the practitioners in the country around me, few of whom were acquainted with the disease, but all agreed in this sentiment, that the cow-pox was not to be relied upon as a certain preventive of the small-pox. This for a while damped, but did not extinguish, my ardour; for, as I proceeded, I had the satisfaction to learn that the cow was subject to some varieties of spontaneous eruptions upon her teats; that they were all capable of communicating sores to the hands of the milkers, and that whatever sore was derived from the animal was called in the dairy the cow-pox. Thus, I surmounted a great obstacle, and in consequence was led to form a distinction between these diseases; one of which only I have denominated the *true*, the other the *spurious*, cow-pox; the latter not possessing any specific power over the constitution. This impediment to my progress was not long removed before another, of far greater magnitude in its appearance, started up.

There were not wanting instances to prove, that when the *true* cow-pox broke out among the cattle at a dairy, a person who had milked an infected animal, and had thereby apparently gone through the disease in common with others, was liable to receive the small-pox afterwards. This, like the former obstacle, gave a painful check to my fond and aspiring hopes; but reflecting that the operations of nature are generally uniform, and that it was not probable the human constitution, having undergone the cow-pox, should in some instances be perfectly shielded from the small-pox, and in many others remain unprotected, I resumed my labours with redoubled ardour. The result was fortunate; for I now discovered that the virus of cow-pox was liable to undergo progressive changes from the same causes precisely as that of small-pox, and that when it was applied to the human skin in its degenerated state, it would produce the ulcerative effects in as great a degree as when it was not decomposed, and sometimes far greater; but having lost *its specific properties*, it was incapable of producing that change upon the human frame which is requisite to render it unsusceptible of the variolous contagion; so that it became evident that a person might milk a cow one day, and, having caught the disease, be for ever secure; while another person, milking the same cow the next day, might feel the influence of the virus in such a way as to produce a sore or sores, and in consequence of this might experience an indisposition to a considerable extent; yet, as has been observed, the specific quality being lost, the constitution would receive no peculiar impression.

Here the close analogy between the virus of small-pox and of cow-pox becomes remarkably conspicuous; since the former, when taken from a recent pustule and immediately used, gives the perfect small-pox to the person on whom it is inoculated; but when taken in a far advanced stage of the disease, or when (although taken early) previously to its insertion, it may be exposed to such agents as, according to the established laws of nature, cause its decomposition, it can no longer be relied on as effectual. This observation will fully explain the source of those errors which have been committed by many inoculators of the cow-pox. Conceiving the whole process to be so extremely simple as not to admit of a mistake, they have been heedless about the state of the vaccine virus; and finding it limpid, as part of it will be, even in an advanced state of the pustule, when the greater portion has been converted into a scab, they have felt an improper confidence, and sometimes mistaken a spurious pustule, which the vaccine fluid in this state is capable of exciting, for that which possesses the perfect character.

During the investigation of the casual cow-pox, I was struck with the idea that it might be practicable to propagate the disease by inoculation, after the manner of the small-pox,
first

first from the cow, and finally from one human being to another. I anxiously waited some time for an opportunity of putting this theory to the test. At length the period arrived. The first experiment was made upon a lad of the name of Phipps, in the spring of the year 1796, in whose arm a little vaccine virus was inserted, taken from the hand of a young woman who had been accidentally infected by a cow. Notwithstanding the resemblance which the pustule, thus excited on the boy's arm, bore to variolous inoculation, yet, as the indisposition attending it was barely perceptible, I could scarcely persuade myself the patient was secure from the small-pox. However, on his being inoculated some months afterwards, it proved that he was secure.* This case inspired me with confidence; and as soon as I could again furnish myself with virus from the cow, I made an arrangement for a series of inoculations. A number of children were inoculated in succession one from the other; and after several months had elapsed they were exposed to the infection of the small-pox, some by inoculation, others by variolous effluvia, and some in both ways; but they all resisted it.

The result of these trials gradually led me into a wider field of experiment, which I went over, not only with great attention, but with painful solicitude. This became universally known through a treatise published in June 1798. The result of my further experience was also brought forward in subsequent publications in the two succeeding years, 1799 and 1800. The distrust and scepticism which naturally arose in the minds of medical men, on my first announcing so unexpected a discovery, has now nearly disappeared. Many hundreds of them, from actual experience, have given their attestations that the inoculated cow-pox proves a perfect security against the small-pox; and I shall probably be within compass if I say, thousands are ready to follow their example, for the scope that this inoculation has now taken is immense; 100,000 persons, upon the smallest computation, have been inoculated in these realms. The numbers who have partaken of its benefits throughout Europe, and other parts of the globe, are incalculable; and it now becomes too manifest to admit of controversy, that the annihilation of the small-pox, the most dreadful scourge of the human species, must be the final result of this practice.

(B.)

REPORT from the Committee on Dr. Jenner's Petition to the House of Commons.

The Committee to whom the petition of Edward Jenner, Doctor of Physic, was referred,—

Have, pursuant to the Order of the House, examined the matter thereof; which is divided into three distinct heads of inquiry:—

1. The utility of the discovery itself, which is the foundation of the petition;
2. The right of the petitioner to claim the discovery;
3. The advantage, in point of medical practice and pecuniary emolument, which he has derived from it.

Upon the first head a number of witnesses of the highest characters and most extensive experience in the profession were examined, whose names, with the substance of their respective evidence (strongly confirmed by their general practice, as well as by that in their own families) appear in the supplement; nor was it for want of the testimony of several other equally respectable physicians and surgeons, whom the petitioner was desirous of producing, that many other names are not inserted; but because your Committee, after having received so considerable a body of evidence to the same purport, and with so little variation in opinion, thought that his case could sustain no injury in being left to rest upon the concurring depositions of those already examined, who had both the most ample experience of the facts, and the best means of forming a judgment upon them. The testimony, also, of some persons not professional has been admitted, who could speak to occurrences that tend to illustrate particular points connected with the subject. The result, as it appears to your Committee, which may be collected from the oral testimony of these gentlemen (with the exception of three of them) is, that the discovery of vaccine inoculation is of the most general utility, inasmuch as it introduces a milder disorder in the place of the inoculated small-pox, which is not capable of being communicated by contagion; that it does not excite other humours or disorders in the constitution; that it has not been known, in any one instance, to prove fatal; that the inoculation may be safely performed at all times of life (which is known not to be the case with regard to the inoculation of the small-pox) in the earliest infancy, as well as during pregnancy, and in old age; and that it tends to eradicate, and, if its use becomes universal, must absolutely extinguish, one of the most destructive disorders by which the human race has been visited.

The written evidence which is inserted in the supplement (for your Committee have judged it proper to make a selection, from a great mass, of what appeared most important) is more various, but directed to the same objects: part of it relates to the very extensive

* This boy was again inoculated nearly five years afterwards, with variolous matter, but no other effect was produced beyond a local inflammation around the punctured part upon the arm.

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extensive and successful practice of this mode of inoculation in every quarter of the globe, the efficacy of which does not seem abated by the cold of the northern, nor by the heat of southern and tropical climates; and though there are no means of examining the authors from whence these attestations come, it would be an act of injustice to the petitioner to exclude such important documents, which show the consideration in which this discovery is held, and the benefit with which it has been attended in so many other countries, to at least as great an extent as in our own.

As a comparison between this new practice and the inoculated small-pox forms a principal consideration in the present inquiry, some facts with regard to the latter engaged the attention of your Committee, and in the supplement are inserted (*see* page 147) statements of the mortality occasioned by the small-pox in 42 years before inoculation was practised in England, and of the 42 years from 1731 to 1772; the result of which appears to be an increase of deaths amounting to 17 in every 1,000; the general average giving 72 in every 1,000 during the first 42 years, and 89 in the 42 years ending with 1772, so as to make the whole excess of deaths in the latter period 1,742. The increase of mortality is stated by another witness (No. 10) to be as 95 to 74, comparing the concluding 30 years with the first 30 of the last century, and the average annual mortality from small-pox to have been latterly about 2,000; for though individual lives are certainly preserved, and it is true that a smaller loss happens in equal numbers who undergo the small-pox now than there was formerly, yet it must be admitted that the general prevalence of inoculation tends to spread and multiply the disease itself: of which, though the violence be much abated by the present mode of treatment, the contagious quality remains in full force. It deserves also to be noticed, that the deaths under the inoculated sort of small-pox, with all the improvements of modern experience, are not inconsiderable; it is stated by one of the witnesses at about one in every 300 throughout England (Nos. 5 and 7); by another, as about one in every 100 in London (No. 15); while the loss in the natural small-pox is probably not less than one in six (No. 8). Nor ought it to be overlooked, that mistakes have been known to arise in the inoculated small-pox, and instances are cited by some of the witnesses in which persons supposed to have gone through the small-pox by inoculation have caught it afterwards in the natural way (Nos. 28 and 39). The general law of vaccine and variolous disease are extremely similar, and it is not surprising that they should resemble each other in their anomalies.

A spurious or imperfect sort of cow-pox having been mentioned in some of the examinations, your Committee have been particularly diligent in their inquiries into every individual case that came within their notice, where suspicions had arisen, or facts were alleged tending to bring into doubt the preventive power of vaccine inoculation; and although, for the reasons before given, they have restricted and abridged the proofs in favour of this practice, they have thought proper to withhold no part of the evidence that has been received relative to the cases that appear to controvert it; of which it will be observed that some (Nos. 6, 17, and 24) evidently resolve themselves into variolous infection, taken previously to the vaccine inoculation; others (Nos. 6 and 23) into the patient not having taken the cow-pox at all; others again (Nos. 10 and 48) from the vaccine matter being, by want of attention in preserving it, decomposed, or mixed with variolous matter (Nos. 38 and 48), or from the fluid being taken at too late a period of the pustule; to which last cause it seems probable that most of the errors and dubious cases are to be referred (Nos. 10, 11, and 38). All the practitioners agree that there is no difficulty in distinguishing the real disorder from every spurious or imperfect appearance, and that the regular progress of the pustule itself, if attended to, cannot be mistaken.

Some cases (Nos. 40 and 42) are not explained in a manner so satisfactory and indisputable as the foregoing, but in leaving them to have such weight as they may appear to deserve, your Committee cannot avoid recurring to the multitude of instances in which endeavours have been used to communicate the small-pox to patients who have been known to go through the regular vaccine disease, in which neither repeated inoculations, nor exposure to the most malignant small-pox, have been able to produce any effect (Nos. 5, 9, 14, 15, 19, 27, 32, and 39).

Upon the second head the whole of the oral depositions, as well as all the written documents from abroad, are uniform and decisive in favour of Dr. Jenner's claim to originality in the discovery; but as some pretensions have been advanced to a knowledge at least of this practice before Dr. Jenner's publications, it may be proper to notice shortly what the nature of those claims is, and in what manner they bear upon this part of the petitioner's case. Such extracts as can be considered in any degree material are contained in pages 155, 156, and 159. The disorder itself and its specific property of securing against small-pox infection was not a discovery of Dr. Jenner, nor of any of those whose writings are referred to, for in various parts of England, in Gloucestershire and Devonshire particularly, there was an opinion of that sort current among the common people employed in dairies, which the observation of inoculators for the small-pox tended to confirm. It appears not improbable that, in some very rare instances, this knowledge was carried one step further, and that the cow-pox was communicated either by handling the teat or by inoculation from the animal for the purpose, and with the intention, of securing against the danger of small-pox; but the practice of which Dr. Jenner asserts himself to be the original inventor is the inoculation from one human being to another, and the mode of transferring indefinitely the vaccine matter without any diminution of its specific power, to which it does not appear that any person has ever alleged a title; and these papers and experiments, whatever accuracy of observation and spirit of research they may evince in their respective authors, and to whatever extent they may be supposed to go, as they were never given to the public, so neither

is there any intimation that they were imparted to Dr. Jenner; nor is it contended that the world became acquainted with this discovery by any other means than by the course of trials conducted by the petitioner, and by his ample and unreserved communications.

Upon the last division of the subject, evidence has been received from persons who were acquainted with the medical practice and former situation of Dr. Jenner (No. 23), which confirms the allegation contained in the petition, that he has not only reaped no advantage from his discovery, but that he has been a considerable loser by the persevering attention which he has bestowed upon this one subject to the neglect of his other business, and without an opportunity of replacing himself in the situation, which a desire of publishing and diffusing more extensively, and establishing, beyond the reach of controversy, the practice itself, induced him to quit. What his gains might probably have been if he had been solicitous to keep the secret within his own practice and that of his immediate pupils, as far as medical men in great practice themselves can form a conjectural opinion, may be collected from the testimonies expressed in Nos. 7 and 30, in which no more than justice is done to the liberality and public spirit of the petitioner in pursuing the propagation and extension of this important discovery, and in rendering it rather of universal utility to the human race than of emolument to himself.

(C.)

REPORT of the Medical Council of the Royal Jennerian Institution, 2 January 1806.

THE Medical Council of the Royal Jennerian Institution having been informed that various cases had occurred which excited prejudices against vaccine inoculation, and tended to check the progress of that important discovery in this kingdom, appointed a committee of 25 of their members to inquire, not only into the nature and truth of such cases, but also into the evidence respecting instances of small-pox alleged to have occurred twice in the same person.

In consequence of this reference, the committee made diligent inquiry into the history of a number of cases, in which it was supposed that vaccination had failed to prevent the small-pox, and also of such cases of small-pox as were stated to have happened subsequently to the natural or inoculated small-pox.

In the course of their examination the committee learned that opinions and assertions had been advanced and circulated which charged the cow-pox with rendering patients liable to particular diseases, frightful in their appearance, and hitherto unknown; and judging such opinions to be connected with the question as to the efficacy of the practice, they thought it incumbent upon them to examine also into the validity of these injurious statements respecting vaccination.

After a very minute investigation of these subjects, the result of their inquiries has been submitted to the Medical Council, and from the report of the committee it appears,—

I. That most of the cases which have been brought forward as instances of the failure of vaccination to prevent the small-pox, and which have been the subjects of public attention and conversation, are either wholly unfounded or grossly misrepresented.

II. That some of the cases are now allowed, by the very persons who first related them, to have been erroneously stated.

III. That the statements of such of those cases as are published have for the most part been carefully investigated, ably discussed, and fully refuted by different writers on the subject.

IV. That, notwithstanding the most incontestable proofs of such misrepresentations, a few medical men have persisted in repeatedly bringing the same unfounded and refuted reports and misrepresentations before the public; thus perversely and disingenuously labouring to excite prejudices against vaccination.

V. That in some printed accounts adverse to vaccination, in which the writers had no authenticated facts to support the opinions they advanced, nor any reasonable arguments to maintain them, the subject has been treated with indecent and disgusting levity; as if the good or evil of society were fit objects for sarcasm and ridicule.

VI. That when the practice of vaccination was first introduced and recommended by Dr. Jenner, many persons, who had never seen the effects of the vaccine fluid on the human system, who were almost wholly unacquainted with the history of vaccination, the characteristic marks of the genuine vesicle, and the cautions necessary to be observed in the management of it, and were therefore incompetent to decide whether patients were properly vaccinated or not, nevertheless ventured to inoculate for the cow-pox.

VII. That many persons have been declared duly vaccinated when the operation was performed in a very negligent and unskilful manner, and when the inoculator did not afterwards see the patients, and therefore could not ascertain whether infection had taken place or not; and that to this cause are certainly to be attributed many of the cases adduced in proof of the inefficacy of the cow-pox.

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VIII. That some cases have been brought before the committee, on which they could form no decisive opinion, from the want of necessary information as to the regularity of the preceding vaccination, or the reality of the subsequent appearance of the small-pox.

IX. That it is admitted by the committee that a few cases have been brought before them of persons having the small-pox who had apparently passed through the cow-pox in a regular way.

X. That cases, supported by evidence equally strong, have been also brought before them, of persons who, after having once regularly passed through the small-pox, either by inoculation or natural infection, have had that disease a second time.

XI. That in many cases in which the small-pox has occurred a second time after inoculation or the natural disease, such recurrence has been particularly severe, and often fatal; whereas, when it has appeared to occur after vaccination, the disease has generally been so mild as to lose some of its characteristic marks, and even sometimes to render its existence doubtful.

XII. That it is a fact well ascertained, that in some particular states of certain constitutions, whether vaccine or variolous matter be employed, a local disease only will be excited by inoculation, the constitution remaining unaffected; yet that matter taken from such local vaccine or variolous pustule is capable of producing a general and perfect disease.

XIII. That if a person bearing the strongest and most indubitable marks of having had the small-pox be repeatedly inoculated for that disease, a pustule may be produced, the matter of which will communicate the disease to those who have not been previously infected.

XIV. That although it is difficult to determine precisely the number of exceptions to the practice, the Medical Council are fully convinced that the failure of vaccination, as a preventive of the small-pox, is a *very rare* occurrence.

XV. That of the immense number who have been vaccinated in the army and navy, in different parts of the United Kingdom, and in every quarter of the globe, scarcely any instances of such failure have been reported to the committee, but those which are said to have occurred in the metropolis or its vicinity.

XVI. That the Medical Council are fully assured that in very many places in which the small-pox raged with great violence, the disease has been speedily and effectually arrested in its progress, and in some populous cities wholly exterminated, by the practice of vaccination.

XVII. That the practice of inoculation for the small-pox on its first introduction into this country was opposed and very much retarded in consequence of misrepresentations and arguments drawn from assumed facts, and of miscarriages arising from the want of correct information, similar to those now brought forward against vaccination; so that nearly 50 years elapsed before small-pox inoculation was fully established.

XVIII. That, by a reference to the Bills of Mortality, it will appear that, to the unfortunate neglect of vaccination, and to the prejudices raised against it, we may, in a great measure, attribute the loss of nearly 2,000 lives by the small-pox in this metropolis alone within the present year.

XIX. That the few instances of failure, either in the inoculation of the cow-pox or of the small-pox, ought not to be considered as objections to either practice, but merely as deviations from the usual course of nature.

XX. That if a comparison be made between the preservative effects of vaccination and those of inoculation for the small-pox, it would be necessary to take into account the greater number of persons who have been vaccinated within a given time; as it is probable that, within the last seven years, nearly as many persons have been inoculated for the cow-pox as were ever inoculated for the small-pox since the practice was introduced into this kingdom.

XXI. That, from all the facts which they have been able to collect, it appears to the Medical Council that the cow-pox is generally mild and harmless in its effects, and that the few cases which have been alleged against this opinion may be fairly attributed to peculiarities of constitution.

XXII. That many well-known cutaneous diseases, and some scrofulous complaints, have been represented as the effects of vaccine inoculation, when in fact they originated from other causes, and in many instances occurred long after vaccination; and that such diseases are infinitely less frequent after vaccination than after either the natural or inoculated small-pox.

Having stated these facts, and made these observations, the Medical Council cannot conclude their report upon a subject so highly important and interesting to all classes of the community without making this *solemn declaration* :—

That in their opinion, founded on their own individual experience, and the information which they have been able to collect from others, mankind have already derived great and incalculable benefit

benefit from the discovery of vaccination; and it is their full belief that the sanguine expectations of advantage and security which have been formed from the inoculation of the cow-pox will be ultimately and completely fulfilled.

Appendix, No. 6.

(signed) *Edward Jenner, M.D., President*

of the Council.

J. C. Lettsom, M.D., V.P.

John Ring, V.P.

Joseph Adams, M.D.

John Addington.

C. R. Aikin.

Wm. Babington, M.D.

M. Baillie, M.D.

W. Blair.

Gil. Blane, M.D.

Isaac Buxton, M.D.

Wm. Chamberlaine.

John Clarke, M.D.

Astley Cooper.

Wm. Daniel Cordell.

Richard Croft, M.D.

Tho. Denman, M.D.

John Dinsdale.

Henry Field.

Edward Ford.

Joseph Fox.

Wm. M. Fraser, M.D.

William Gaitskell.

Wm. Hamilton, M.D.

John Hingstone.

Eeverard Home.

Robert Hooper, M.D.

Joseph Hurlock.

John Jones.

Thomas Key.

Francis Knight.

E. Leese.

L. Leese.

William Lewis.

William Lister, M.D.

Alex. Marcet, M.D.

Jos. Hart Myers, M.D.

Jas. Parkinson.

Thos. Paytherus.

John Pearson.

George Rees, M.D.

John Gibbs Ridout.

J. Squire, M.D.

Jas. Upton.

J. Christian Wachsell.

Thos. Walshman, M.D.

Robert Willan, M.D.

Allen Williams.

James Wilson.

J. Yelloly, M.D.

John Walker,

Secretary to the Council.

2 January 1806.

(D.)

REPORT of the Royal College of Physicians of London on VACCINATION.

(Ordered to be Printed, by the House of Commons, 8th July 1807.)

THE Royal College of Physicians of London, having received his Majesty's commands, in compliance with an Address from the House of Commons, "to inquire into the state of vaccine inoculation in the United Kingdom, to report their opinion and observations upon that practice, upon the evidence which has been adduced in its support, and upon the causes which have hitherto retarded its general adoption," have applied themselves diligently to the business referred to them.

Deeply impressed with the importance of an inquiry which equally involves the lives of individuals and the public prosperity, they have made every exertion to investigate the subject fully and impartially. In aid of the knowledge and experience of the members of their own body they have applied separately to each of the licentiates of the college; they have corresponded with the Colleges of Physicians of Dublin and Edinburgh; with the Colleges of Surgeons of London, Edinburgh, and Dublin; they have called upon the societies established for vaccination for an account of their practice, to what extent it has been carried on, and what has been the result of their experience; and they have, by public notice, invited individuals to contribute whatever information they had severally collected. They have, in consequence, been furnished with a mass of evidence, communicated with the greatest readiness and candour, which enables them to speak with confidence upon all the principal points referred to them.

I. During eight years which have elapsed since Dr. Jenner made his discovery public, the progress of vaccination has been rapid, not only in all parts of the United Kingdom, but in every quarter of the civilised world. In the British Islands some hundred thousands have been vaccinated; in our possessions in the East Indies upwards of 800,000; and among the nations of Europe the practice has become general. Professional men have submitted it to the fairest trials, and the public have, for the most part, received it without prejudice. A few, indeed, have stood forth the adversaries of vaccination, on the same grounds as their predecessors who opposed the inoculation for the small-pox, falsely led by hypothetical reasoning in the investigation of a subject which must be supported or rejected upon facts and observations only. With these few exceptions the testimony in favour of vaccination has been most strong and satisfactory, and the practice of it, though it has received a check in some quarters, appears still to be upon the increase in most parts of the United Kingdom.

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II. The College of Physicians, in giving their observations and opinions on the practice of vaccination, think it right to premise, that they advance nothing but what is supported by the multiplied and unequivocal evidence which has been brought before them, and they have not considered any facts as proved but what have been stated from actual observation.

Vaccination appears to be, in general, perfectly safe, the instances to the contrary being extremely rare. The disease excited by it is slight, and seldom prevents those under it from following their ordinary occupations. It has been communicated with safety to pregnant women, to children during dentition and in their earliest infancy. In all respects it possesses material advantages over inoculation for the small-pox, which, though productive of a disease generally mild, yet sometimes occasions alarming symptoms, and is, in a few cases, fatal.

The security derived from vaccination against the small-pox, if not absolutely perfect, is as nearly so as can perhaps be expected from any human discovery; for among several hundred thousand cases, with the results of which the College have been made acquainted, the number of alleged failures has been surprisingly small, so much so as to form certainly no reasonable objection to the general adoption of vaccination; for it appears that there are not nearly so many failures in a given number of vaccinated persons as there are deaths in an equal number of persons inoculated for the small-pox. Nothing can more clearly demonstrate the superiority of vaccination over the inoculation of the small-pox than this consideration; and it is a most important fact, which has been confirmed in the course of this inquiry, that in almost every case where the small-pox has succeeded vaccination, whether by inoculation or by casual infection, the disease has varied much from its ordinary course; it has neither been the same in violence nor in the duration of its symptoms, but has, with very few exceptions, been remarkably mild, as if the small-pox had been deprived, by the previous vaccine disease, of all its usual malignity.

The testimonies before the College of Physicians are very decided in declaring that vaccination does less mischief to the constitution, and less frequently gives rise to other diseases, than the small-pox, either natural or inoculated.

The College feel themselves called upon to state this strongly, because it has been objected to vaccination that it produces new, unheard-of, and monstrous diseases. Of such assertions no proofs have been produced, and, after diligent inquiry, the College believe them to have been either the inventions of designing or the mistakes of ignorant men. In these respects, then, in its mildness, its safety, and its consequences, the individual may look for the peculiar advantages of vaccination. The benefits which flow from it to society are infinitely more considerable; *it spreads no infection, and can be communicated only by inoculation.* It is from a consideration of the pernicious effects of the small-pox that the real value of vaccination is to be estimated. The natural small-pox has been supposed to destroy a *sixth* part of all whom it attacks; and that even by inoculation, where that has been general in parishes and towns, about one in 300 has usually died.

It is not sufficiently known, or not adverted to, that nearly *one-tenth*, some years more than one-tenth, of the whole mortality of London, is occasioned by the small-pox; and *however beneficial the inoculation of the small-pox may have been to individuals, it appears to have kept up a constant source of contagion, which has been the means of increasing the number of deaths by what is called the natural disease. It cannot be doubted that this mischief has been extended by the inconsiderate manner in which great numbers of persons, even since the introduction of vaccination, are still every year inoculated with the small-pox, and afterwards required to attend two or three times a week at the places of inoculation, through every stage of their illness.*

From this, then, the public are to expect the great and uncontroverted superiority of vaccination, that it communicates no casual infection, and, while it is a protection to the individual, it is not prejudicial to the public.

III. The College of Physicians, in reporting their observations and opinions on the evidence adduced in support of vaccination, feel themselves authorised to state that a body of evidence so large, so temperate, and so consistent, was perhaps never before collected upon any medical question. A discovery so novel, and to which there was nothing analogous in nature, though resting on the experimental observations of the inventor, was at first received with diffidence; it was not, however, difficult for others to repeat his experiment, by which the truth of his observations was confirmed, and the doubts of the cautious were gradually dispelled by extensive experience. At the commencement of the practice, almost all that were vaccinated were afterwards submitted to the inoculation of the small-pox; many underwent this operation a second and even a third time, and the uniform success of these trials quickly bred confidence in the new discovery. But the evidence of the security derived from vaccination against the small-pox does not rest alone upon those who afterwards underwent variolous inoculation, although amounting to many thousands; for it appears, from numerous observations communicated to the college, that those who have been vaccinated are equally secure against the contagion of epidemic small-pox. Towns, indeed, and districts of the country in which vaccination had been general, have afterwards had the small-pox prevalent on all sides of them without suffering from the contagion. There are also in the evidence a few examples of epidemic small-pox having been subdued by a general vaccination. It will not therefore appear extraordinary that many who have communicated their observations should state, that though at first they thought unfavourably of the practice, experience had now removed all their doubts.

It has been already mentioned that the evidence is not universally favourable, although
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it is in truth nearly so, for there are a few who entertain sentiments differing widely from those of the great majority of their brethren. The college therefore deemed it their duty in a particular manner to inquire upon what grounds and evidence the opposers of vaccination rested their opinions. From personal examination, as well as from their writings, they endeavoured to learn the full extent and weight of their objections. They found them without experience in vaccination, supporting their opinions by hearsay information, and hypothetical reasoning; and upon investigating the facts which they had advanced, they found them to be either misapprehended or misrepresented; or that they fell under the description of cases of imperfect small-pox before noticed, and which the college have endeavoured fairly to appreciate.

The practice of vaccination is but of eight years' standing, and its promoters, as well as opponents, must keep in mind that a period so short is too limited to ascertain every point, or to bring the art to that perfection of which it may be capable. The truth of this will readily be admitted by those acquainted with the history of inoculation for the small-pox. Vaccination is now, however, well understood, and its character accurately described. Some deviations from the usual course have occasionally occurred, which the author of the practice has called spurious cow-pox, by which the public have been misled, as if there were a true and a false cow-pox; but it appears that nothing more was meant than to express irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred. Those who perform vaccination ought therefore to be well instructed, and should have watched with the greatest care the regular progress of the pustule, and learnt the most proper time for taking the matter. There is little doubt that some of the failures are to be imputed to the experience of the early vaccinators, and it is not unreasonable to expect that further observation will yet suggest many improvements that will reduce the number of anomalous cases, and furnish the means of determining with greater precision when the vaccine disease has been effectually received.

Though the College of Physicians have confined themselves in estimating the evidence to such facts as have occurred in their own country, because the accuracy of them could best be ascertained, they cannot be insensible to the confirmation these receive from the reports of the successful introduction of vaccination, not only into every part of Europe, but throughout the vast continents of Asia and America.

IV. Several causes have had a partial operation in retarding the general adoption of vaccination. Some writers have greatly undervalued the security it affords, while others have considered it to be of a temporary nature only; but if any reliance is to be placed on the statements which have been laid before the college, its power of protecting the human body from the small-pox, though not perfect indeed, is abundantly sufficient to recommend it to the prudent and dispassionate, especially as the small-pox, in the few instances where it has subsequently occurred, has been generally mild and transient. The opinion that vaccination affords but a temporary security is supported by no analogy in nature, nor by the facts which have hitherto occurred. Although the experience of vaccine inoculation be only of a few years, yet the same disease, contracted by the milkers of cows, in some districts, has been long enough known to ascertain that in them, at least, the unsusceptibility of the small-pox contagion does not wear out by time. Another cause is, the charge against vaccination of producing various new diseases of frightful and monstrous appearance.

Representation of some of these have been exhibited in prints in a way to alarm the feelings of parents, and to infuse dread and apprehension into the minds of the uninformed. Publications with such representations have been widely circulated, and, though they originate either in gross ignorance or wilful misrepresentation, yet have they lessened the confidence of many, particularly of the lower classes, in vaccination. No permanent effects, however, in retarding the progress of vaccination need be apprehended from such causes, for as soon as the public shall view them coolly and without surprise, they will excite contempt, and not fear.

Though the College of Physicians are of opinion that the progress of vaccination has been retarded in a few places by the above causes, yet they conceive that its general adoption has been prevented by causes far more powerful, and of a nature wholly different. The lower orders of society can hardly be induced to adopt precautions against evils which may be at a distance; nor can it be expected from them, if these precautions are attended with expense. Unless, therefore, from the immediate dread of epidemic small-pox, neither vaccination nor inoculation appears at any time to have been general, and when the cause of terror has passed by, the public have again relapsed into a state of indifference and apathy, and the salutary practice has come to a stand. It is not easy to suggest a remedy for an evil so deeply imprinted in human nature. To inform and instruct the public mind may do much, and it will probably be found that the progress of vaccination in different parts of the United Kingdom will be in proportion to that instruction. Were encouragement given to vaccination, by offering it to the poorer classes without expense, there is little doubt but it would in time supersede the inoculation for the small-pox, and thereby various sources of variolous infection would be cut off; but, till vaccination becomes general, it will be impossible to prevent the constant recurrence of the natural small-pox by means of those who are inoculated, except it should appear proper to the Legislature to adopt, in its wisdom, some measure by which those who still, from terror or prejudice, prefer the small-pox to the vaccine disease, may, in thus consulting the gratification of their own feelings, be prevented from doing mischief to their neighbours.

From the whole of the above considerations, the College of Physicians feel it their duty strongly to recommend the practice of vaccination. They have been led to this conclusion

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by no preconceived opinion, but by the most unbiassed judgment, formed from an irresistible weight of evidence which has been laid before them. For, when the number, the respectability, the disinterestedness, and the extensive experience of its advocates is compared with the feeble and imperfect testimonies of its few opposers; and when it is considered that many, who were once adverse to vaccination, have been convinced by further trials, and are now to be ranked among its warmest supporters, the truth seems to be established as firmly as the nature of such a question admits; so that the College of Physicians conceive that the public may reasonably look forward with some degree of hope to the time when all opposition shall cease, and the general concurrence of mankind shall at length be able to put an end to the ravages at least, if not to the existence, of the small-pox.

Royal College of Physicians,
10th April 1807.

(signed) *Lucas Pepys*, President.

Jas. Hervey,
Registrar.

(H.)

ON the present DEATH RATES of LONDON, at different Ages and from different Diseases, as compared with the corresponding Death Rates at the End of the 17th and in the Middle of the 18th Century, by Dr. GREENHOW, Lecturer on Public Health at St. Thomas's Hospital, Physician to the Western General Dispensary.

I BELIEVE there is no good reason for supposing that vaccinated persons, because they are less susceptible of small-pox, are therefore more liable to be attacked by other diseases, either of an infective or constitutional character. It has, indeed, been asserted that the comparative immunity from small-pox produced by vaccination has been counterbalanced by a greater prevalence and fatality of other diseases, and particularly of fever, phthisis, and strumous affections. This assertion is, however, totally without the support of facts; for both the mortality from all causes, and the mortality occasioned by each of these diseases, have largely diminished since the period when the prevalence of small-pox was unchecked by preventive measures. This opinion of mine is founded upon a careful examination of the London bills of mortality, and a comparison of the average death-rates from all causes, and from each of these specified causes, calculated over three periods of ten years each, viz., from December 14, 1680, to December 16, 1690,* previous to the introduction of inoculation, from December 1745 to December 1755,† and again from the ten years from 1846 to 1855 inclusive, during which vaccination has been in general use.

The facts are shown in the accompanying table, in reference to which, however, it is necessary to explain that, whilst it is as nearly as possible correct in respect of the general mortality of the third period, the present death-rates from fever, diseases of the chest, and strumous affections, are somewhat over-rated in comparison with the same classes of disease in the earlier periods. On the other hand, both the general and particular death-rates of the ten selected years of the 17th and 18th centuries are under-estimated, from the circumstance that the bills of mortality took cognizance only of interments in parochial burial grounds within the limits of the metropolis; no account being taken of the deaths of persons buried in parish cemeteries adjacent to London, or in the extra-parochial burial-grounds of St. Paul's Cathedral, Westminster Abbey, the Temple, the Rolls, Lincoln's Inn, St. Peter's in the Tower, the Charter House, or the Hospitals. For the same reason the deaths of many Dissenters, Jews, and Roman Catholics, who were buried in sectarian places of sepulture, must have been omitted from the returns.

The population of London in 1685 was estimated by King at 530,000, an estimate which is considered to have been a very near approximation to the truth. The deaths at that period, and for long afterwards, considerably exceeded the births; or to speak more properly, the baptisms fell short of the burials by about one-third.‡ The population of the metropolis

* This period was chosen because it corresponds with King's calculation of the population of London, and because small-pox (the mortality from which increased after the introduction of inoculation) was uninfluenced in its course by any artificial interference.

† The Companion to the Almanack for 1823 contains a computation of the London population for 1750, which has been used for the present purpose.

‡ The old bills of mortality referred only to funerals and baptisms performed at parish churches. There was no proper registration of births and deaths until the passing of the present Registration Act. The christenings were in excess of the burials thrice only during the 18th century; namely, in 1790, 1797, and 1799.

metropolis is, therefore, supposed to have been very stationary for a long period; the immigration into it from rural districts and provincial towns having done little more than compensate for the loss sustained by the excess of deaths over births. The correctness of this opinion is in a great measure confirmed by the fact that the population of London within the old bills of mortality amounted in 1801 to only 742,625 persons, showing an increase of little more than 40 per cent. during the 116 years that had elapsed since the date of King's computation, although there is no doubt that the population had latterly increased directly, as well as by its growth from external sources.

By some authorities the death-rate of London far onwards in the 18th century is said to have been as high as 500 per annum out of every 10,000 inhabitants. Assuming the correctness of King's estimate of the population in 1685, the average annual death-rate of London within the bills of mortality for the 10 years 1681 to 1690 inclusive (calculated upon the number of funerals recorded in the weekly bills), appears to have been 421 in the 10,000. For the reason already assigned, this estimate is probably a good deal under the truth. Its inaccuracy is augmented by the fact that a considerable infusion of healthy persons, at the least fatal period of life, annually poured into the metropolis in pursuit of the more lucrative occupation therein procurable. These sources of inaccuracy, however, since they tend to lessen the death-rates of that period, do but lend additional force to the fact that the present death-rate is only 250 in the 10,000; or, if corrected so as to include only the district comprised within the old bills of mortality, about 260 in the 10,000; showing a decrease in the general death-rate of, at the least, 160 persons out of every 10,000 annually since the close of the 17th century. In other words, if the mortality within the limits of the metropolis, as defined in the baptismal and mortuary returns of the 17th century, were now equal to its mortality 165 years ago, London would be sustaining an annual loss by death of more than 25,000 persons over and above the number of those who, in our time, compose its list of dead. Or, if the present mortality within the limits of the Registrar General's weekly returns were equal to that of the metropolis of the 17th century, the gross annual loss would be raised by the addition of upwards of 40,000 deaths. The deaths would thus again exceed the births; and, as in the 17th and 18th centuries, the population of London could only be maintained by the immigration of persons from rural districts. The public health of London, as indicated by the rate of mortality, has therefore improved in the proportion of 26 to 42 since the close of the 17th century.

The general death-rate of the middle period selected for this comparison (1746-55), 355 in the 10,000, occupies just that intermediate place in point of numbers, between those of 1685 and 1851, which it does in regard to time. It may, therefore, be fairly assumed, that the improved state of the public health has been a gradual process, keeping pace with the general progressive improvement in the habits and circumstances of the people.

The improvement in regard to the special diseases asserted to have taken the place of small-pox is, with the exception of pulmonary affections, still more remarkable; and even the latter, although more dependent on climate than most diseases, have become less fatal during the last century and a half. The annual average mortality from the causes classed in the old bills of mortality, as "consumption and tussick," "pleurisy," and "cold and cough," which together correspond with "phthisis" and diseases of the organs of respiration in the present weekly bills, during the ten years extending from 1681 to 1690, was 69·3 in the 10,000. This is, however, an inadequate estimate, since upwards of 1,000 deaths annually were attributed to old age, many of which would in our day have been unquestionably referred to affections of the chest; for, while comparatively few persons die of natural decay, a large number of aged persons perish from attacks of pneumonia or bronchitis. The increased death-rate from diseases of the chest in the second period is, perhaps, partly, owing to the reference of many deaths which had been classed as fever at the former period, to their proper place in this division. Epidemics of pulmonary disease appear also to have existed in two out of the ten selected years, for the mortality from this cause was largely in excess both in 1746 and 1749. Alvine flux, a disease closely resembling if not identical with the cholera of the present century, was exceedingly fatal in the concluding years of the 17th century. The average mortality it produced between 1680 and 1690 was about 2,500 annually; and, no doubt, many of its victims were previously suffering from chronic affections, among which diseases of the chest would form a large section. The mortality from flux rapidly and progressively decreased in the 18th century, so that the annual average mortality occasioned by it fell from upwards of 1,000 in the first 10 years of the century to only 110 for the 10 years, 1746 to 1755. The immediate consequence of this improvement in the public health would be the reference of an increased number of deaths to the various chronic affections which had previously furnished victims to the flux, among which, as I have already said, pulmonary affections would occupy a prominent place.

During the 10 years of the present century that have been selected for the purpose of this comparison, the deaths from diseases of the organs of respiration and from phthisis (which to obviate all doubts as to diagnosis, are thrown into a single class) have annually been at the rate of 68·2 in the myriad. It is, however, probable that a large proportion of the deaths which are now referred to pneumonia, and perhaps even some of the more rapid cases of phthisis, would have formerly been attributed to fever, on account of the pungent heat of skin by which these diseases are characterised. If, therefore, the deaths from pneumonia, which are included in the foregoing calculation of the present death-rate from pulmonary affections, be taken from the class of diseases of the chest and transferred to

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that of fevers, the annual death-rate from diseases of the organs of respiration (exclusive of pneumonia and including phthisis) is reduced from 68·2 to 52·8 in the myriad. Moreover, in thus comparing the death-rates of the 17th, 18th, and 19th centuries from diseases of the chest, due allowances should be made for the already recited fact, that these affections are very much influenced, both in their prevalence and fatality, by climate and seasonal conditions, which, however much they may vary between particular years, are tolerably constant when the comparison is extended over considerable periods. On this account we ought not to expect the same reduction in the mortality from this cause as from the others presently to be noticed. Furthermore, the larger amount of mechanical impurities inhaled with the atmosphere, the nature of several manufacturing operations, and perhaps, also, the more sedentary habits of many classes of workmen in the present day, all undoubtedly tend to maintain the prevalence and add to the fatality of pulmonary diseases. Whatever doubt, therefore, may be entertained as to the amount of diminution in the mortality from pulmonary complaints, it is at least very evident that no increase has been consequent upon the lessened prevalence of small-pox.

The diseases classed in the bills of mortality as "fever" and "spotted fever" were fatal, on an average, to 63·3 persons out of every 10,000 of the inhabitants of London, in each of the 10 years between 1681 and 1690. Sixty years later the average annual death-rate from fever, calculated over the 10 years from 1746 to 1755, had fallen to 53·9. In the present day, it is frequently difficult to distinguish between primary cephalic affections and fever accompanied by cephalic symptoms. It is more than probable that many deaths, now correctly referred to disease of the head, as well as certain chest affections, accompanied, as they often are, by an intense and pungent heat of skin, would be accounted as fever by the unskilled persons who formerly assigned the cause of death. Moreover, no mention is made of scarlet fever, which, although it might occasionally be returned with measles, must likewise have aided to swell the gross annual mortality from fever. To obviate these sources of fallacy the six diseases, scarlet fever, remitting fever, infantile fever, typhus, cephalitis, and pneumonia, have been thrown together to form the class of fever, for the purpose of comparing the present mortality from this cause with that of the 10 years of the 17th and 18th centuries. The present death-rate of the class of fever thus formed is only 38·5 in the 10,000, showing a diminution of 24·8 since 1685, and of 15·4 during the last 100 years; thus unequivocally proving that fever has not usurped the place vacated by small-pox.

The diminution in the death-rate from strumous affections is even larger than that of fever. Excluding the deaths classed under the term "chrysoms and infants," many of which were probably of strumous origin, and which amounted to between 200 and 300 annually, upwards of 80 persons in the myriad died in each year, between 1681 and 1690, from the class of strumous diseases formed of the deaths registered under the heads of "convulsions," "rickets," "water in the head," and "evil." Between 1746 and 1755, the annual death-rate of these same diseases had risen to 109·9 per myriad; an increase, perhaps, like that in the class of pulmonary affections, partially caused by the greatly decreased death-rate from alvine flux; but probably still more largely occasioned by the diminution in the number of deaths recorded from "chrysoms and infants," and their reference to the head of "convulsions," which increased almost in exact proportion as the other lessened. The analogous diseases, scrofula, hydrocephalus, and convulsions, with the addition of tabes mesenterica, a form of strumous affection which, not being separately mentioned in the older bills, is not comprised in the calculation for the two earlier periods,* are in our time conjointly fatal to less than 21 out of every myriad of the living population. In other words, scrofulous disease, considered apart from consumption, is nearly three-fourths less fatal, now that the deaths from small-pox form but a small part of the gross mortality, than it was anterior to the adoption of inoculation. To revert once more to pulmonary diseases, may not this very large diminution in the number of deaths from the strumous affections of early life be one indirect cause of the maintenance of a large mortality from tubercular phthisis, persons who would formerly have fallen victims to hydrocephalus, convulsions, or rickets, being preserved at the present day until the development of their constitutional malady in the form usually assumed at a later period of life?

Notwithstanding the uncertainties of nomenclature, and the apparent fluctuations between the first and second series of years, it is quite certain that both the general mortality and that from special diseases has very largely declined since the end of the 17th and middle of the 18th centuries; and that there is not the slightest foundation for the assertion that any kind of disease has increased *pari passu* with the decrease of small-pox, or the employment of vaccination.

TABLE

* There can be little doubt that tabes mesenterica existed in the former periods, but that it was referred to some other head, perhaps, accompanied as it is by two such prominent symptoms as large belly and diarrhoea, partly to tympany and partly to flux. There is perhaps as little doubt that the same constitutional tendency which at one time becomes developed into a certain form of disease may under a change of circumstances assume a different form. It is thus that I would account for the entire disappearance of rickets from the causes of death, the place they formerly occupied being perhaps, in our time, partly assumed by mesenteric disease. That some such substitution of one form of disease for another really occurs I do not hesitate to believe; but it is rather a conversion of analogous diseases arising from the same constitutional vice into one another than a substitution, and is very different from the substitution of other diseases for small-pox so unphilosophically, and, as above shown, so erroneously asserted, without, so far as I know, the adduction of a single corroborative fact.

TABLE shewing the average Annual Mortality of London from all Causes, and from Affections of the Chest, Fevers, Strumous Diseases, and Small-pox, in three periods of 10 years each, viz., from 1681 to 1690, from 1746 to 1755, and from 1846 to 1855, inclusive.

DATE.	* Population of the Metropolis within the Bills of Mortality.	Average Annual Number of Deaths.						Average Annual Death-rate per 10,000 Persons.					
		Average Number of Deaths in each of the Ten Years.	† Average Annual Number of Deaths from Pulmonary Affections, including Pneumonia.	Average Annual Number of Deaths from Pulmonary Affections, exclusive of Pneumonia.	Average Annual Number of Deaths from Fevers.	Average Annual Number of Deaths from Strumous Diseases.	Average Annual Number of Deaths from Small-pox.	Death-rate per 10,000 Persons, calculated on a Ten Years Average.	Average Annual Death-rate from Small-pox, per 10,000 Persons.	Average Annual Death-rate from Pulmonary Affections (including Pneumonia), per 10,000 persons.	Average Annual Death-rate from Pulmonary Affections (exclusive of Pneumonia), per 10,000 Persons.	Average Annual Death-rate from Fevers, per 10,000 Persons.	Average Annual Death-rate from Strumous Diseases, per 10,000 persons
1681-90	530,000	22,362	3,673(a)	3,673(a)	3,356(e)	4,248(g)	1,664(i)	421.0	31.39	69.3(n)	69.3(n)	63.3	80.1
1746-55	653,900	23,216	4,804(b)	4,804(b)	3,526(e)	7,183(g)	1,991(k)	355.0	30.44	73.4	73.4	53.9	109.9
1846-55	2,362,236	59,014	16,131(c)	12,481(d)	9,112(f)	4,886(h)	799(l)	249.0(m)	3.38	68.2	52.8	38.5	20.6

* The population is given according to the estimate formed for the middle year of the series, viz., King's computation for 1685; a computation published in the "Companion to the Almanack" of 1828 for 1750; and the Census of 1851. King's calculation is considered to have been a very fair approximation; but, if in error, it was rather in excess of numbers than the contrary. The estimated population of 1750 is also probably in excess; for if we admit King's estimate as correct, it makes the ratio of increase between 1750 and 1801 to have been somewhat less than that between 1685 and 1750, which is unlikely, seeing that the proportion of deaths to births was constantly decreasing during the latter portion of the 18th century.

† Upwards of 1,000 deaths annually are set down as caused by "Old Age." Undoubtedly many of these would now find a place under Pneumonia and Bronchitis.

(a) "Consumption and Tisick," "Pleurisy," and "Cold and Cough."

(b) "Consumption," "Cough," "Asthma and Tisick."

(c) Diseases of the respiratory organs and Phthisis.

(d) Phthisis and diseases of the respiratory organs, minus Pneumonia.

(e) Consisting of the articles "Fever" and "Spotted Fever," therefore probably including Scarlet Fever and cases of cerebral and pulmonary disease, attended by much heat of skin.

(f) Comprising Scarlet Fever, Remitting Fever, Infantile Fever, Typhus, Cephalitis, and Pneumonia.

(g) "Convulsions," "Rickets," "Water-in-head," and "Evil."

(h) Scrofula, Tabes-mesenterica, Hydrocephalus, and Convulsions.

(i) In three of these years Small-pox greatly exceeded the average.

(k) In four of these years Small-pox greatly exceeded the average.

(l) In four of these years the average was greatly exceeded, and in 1848 more than doubled.

(m) The death-rate of the portion of the present metropolis comprehended within the limits of the old Bills of Mortality is somewhat higher, being nearly 260 in the 10,000.

(n) Pneumonia is not distinguished as a separate disease in the old bills. It has been excluded in the second calculation, under the belief that would formerly be set down as "Fever."

Another assertion which has been made in reference to the employment of vaccination as a prophylactic of small-pox is, that although the practice of vaccination has tended to prevent death in early life, this advantage has only been temporary, and has been more than counterbalanced by the increased number of deaths at a later period; and, that viewed as an economical question, the result has been to add to the public burthens by lengthening the existence of a class of lives that cost the community much, but are cut off as soon as they reach the productive period of life, and before they have contributed their proportion towards the common stock. Even if this were true it would be but a questionable argument against vaccination, for vaccination would be a great boon if it led to the prolongation of life only for a brief space; and especially if, in consequence of its use, the feeble members of the community were cut off by non-contagious, less loathsome, and to those who survive less disfiguring diseases, than small-pox. Fortunately there is no difficulty in disproving this mischievous assertion, which, like that already disposed of, is untrue and has been apparently made without any investigation of the real facts. For this purpose it is necessary to compare the mortality at different periods of life, anterior and subsequent to the introduction of vaccination. I have accordingly selected four periods of 10 years each, during the last and present centuries, for this comparison. Commencing with 1728, being the first year in which the ages of the dead were published in the bills of mortality, I have abstracted from the returns the number of deaths at all ages, and at each of the principal periods of life, for the 10 years ending at Christmas, 1737. From the data thus obtained the numbers dying at each period of life out of every thousand of the dead have been calculated. Allowing intervals of 30 years to elapse between each series, similar calculations have been made for the 10 years between 1768-77, and again between 1808-17. Lastly, I have made the like calculation for the ten years from 1842 to 1851

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inclusive, being compelled to take these particular years instead of allowing an interval of 30 years to elapse, because the periods of life at which deaths have taken place are differently arranged in the Registrar General's Reports since 1851.

The accompanying table, which exhibits the results of this investigation, together with the principal data upon which they are founded, incontestably proves that the ages of the dead in London do not afford the semblance of support to the alleged statement. The facts shewn by the table are indeed just the reverse of the assertion; for it is evident, that whilst there has been a large diminution in the mortality at the early periods of life, there has likewise been a large increase in the number of deaths at the more advanced age of 60 years and upwards since the introduction of vaccination. Thus, we learn from the table, that whilst the deaths of children under five years of age have fallen from 474 to 399, or nearly one-sixth out of every thousand deaths at all ages, during the interval between 1737 and 1842, those of persons who have survived to the age of 60 and upwards, have, during the same period, risen from 121 to 203, or in the proportion of 10 to 6. Again, the deaths below the age of 20 have fallen from 541 out of each thousand deaths during the 10 years comprised between 1728-37 to 485 in the 10 years 1842-51, or about one ninth. As might have been anticipated, the variations in the middle period of life, between the ages of 20 and 60, have been less; the changes have also been less constantly in one direction, but the fluctuations have been small, and lend no support to the opinion that the diminished number of deaths anterior to the age of 20 has been attended by an increased mortality in early manhood. It must, moreover, be recollected that the figures in the table do not represent death-rates, and that a diminished number of deaths at the early period of life necessarily increases the proportion of deaths at the subsequent ages. If, therefore, whilst the value of life under 20 years of age had improved as much as it has during the period over which this investigation has extended, the expectation of life to persons that should attain the age of 20 had remained stationary, the result of the lessened fatality of early life would have shewn itself in a table of this kind by a large increase in the proportion of persons dying between the ages of 20 and 60. The truth, however, is, as we have seen, that whilst the fatality of early life has been steadily diminishing, the number of persons who attain to a good old age has as regularly increased; for, whereas the deaths of persons aged 60 years and upwards, during the decennium 1728-37, fell short of one-eighth of the entire mortality, the deaths of the same class in the decennium 1842-51 exceed a fifth of the whole number of deaths.

In truth, from the two main facts set forth in this paper, the diminished death-rate of several diseases, and the increased value of life in the present day, we might, with reason, turn the tables on the opponents of vaccination, and infer, that apart from the prevention of small-pox, vaccination has been a great blessing to the human race, since the diminished mortality from strumous affections, and perhaps from some other diseases, is partly to be ascribed to the greatly lessened prevalence of so powerful a cause of their development as this formidable exanthem must have been in those who recovered from the immediate attack.

TABLE showing the Total Mortality of London, the Total Number of Deaths at Four several Periods of Life, and the Proportion of Deaths to 1,000 deaths at all Ages, at each of these Periods, for four series of 10 Years each, in the 18th and 19th Centuries.

DATE.	Total Number of Deaths in each period of 10 Years.	Total Number of Deaths at each period of Life in 10 Years.				Composition of every 1,000 Deaths according to the Ages of the Dying.			
		Under 5 Years.	Between 5 and 20.	Between 20 and 60.	60 and upwards.	Under 5 Years.	Between 5 and 20.	Between 20 and 60.	60 and upwards.
1728-37 -	267,150	126,744	18,017	90,004	32,385	474	67	338	121
1768-77 -	221,189	102,213	16,639	72,670	29,667	462	75	329	134
1808-17 -	188,814	74,940	14,014	65,864	33,966	397	74	349	180
1842-51 -	532,260	212,740	45,511	116,052	107,957	399	86	312	203

SUPPLEMENT to (J).

REMARKS in reference to the Question whether "Vaccinated Persons, in being rendered less susceptible of Small-pox, become more susceptible of any other Infective Disease, or of Phthisis."—By Dr. *Baly*, of St. Bartholomew's Hospital, F.R.S.

No facts that I have met with have led me to believe or suspect that vaccinated persons, in being rendered less susceptible of small-pox, become more susceptible of any other infective disease, or of phthisis. Other infectious diseases are observed to spread according to laws of their own, and almost without exception they attack persons of the lower classes of society, amongst whom vaccination is much neglected, with more frequency and more virulence than those of the higher classes, who have, with few exceptions, been vaccinated.

Phthisis is, in a very large proportion of cases, inherited. It then often affects several children of a family; and it does this with more certainty among the lower than among the higher classes, although vaccination is much more generally practised among the latter. Phthisis also arises independently of hereditary predisposition, in single individuals of different families, owing usually to some special circumstances having weakened or disturbed the health. And this, too, occurs much more frequently in the lower than in the higher classes of society.

A French author has propounded the notion that typhoid fever, or intestinal typhus, is only the internal form of small-pox; and maintains that vaccination, while it prevents the development of small-pox on the outer surface of the body, merely turns it upon the internal surface of the bowels. He seems to base this theory chiefly on two grounds:—(1) the recent recognition of the typhoid fever; and (2) the fancied resemblance of form between the intestinal disease in this fever and the eruption on the skin in small-pox.

This theory must appear utterly absurd to any physician well acquainted with the two diseases; but, as it might, nevertheless, be received by the laity as a valid argument against vaccination, I venture to state some of the facts which show its futile character.

With regard to the recent recognition of typhoid fever as a distinct fever, attended by peculiar diseased changes in the bowels, it may be sufficient to say that at the time when this discovery was made, namely, the beginning of the present century, the anatomy of diseases had been only partially and imperfectly cultivated, and the exact characters of many internal diseases now familiar to us were yet unknown; and that no good writer has doubted the previous existence of typhoid fever, although the descriptions of it left by the early physicians are vague and indistinct.

The supposed resemblance between the intestinal disease of the fever and the eruption of small-pox has no real existence. The former affects, almost exclusively, certain oval patches of glandular structure, situated at certain spots along the interior of one portion of the bowels. The small-pox eruption appears as small distinct pimples, which may form on any part of the surface of the skin. These pimples, when the disease reaches its height, contain "matter," and are called pustules; and such pustules are often seen even on the interior of the mouth, throat, and windpipe. The disease in the bowels in typhoid fever, on the other hand, never presents pustules containing matter. Moreover, the general symptoms, the course, and the duration of the one disease are unmistakably different from those of the other disease.

Small-pox, again, is a highly contagious disease; and the only known source of the virus producing it is the bodies of persons already suffering from the disease. Typhoid fever is only in a slight degree infectious, and the miasma which gives rise to it is developed in the atmosphere.

Lastly, the essential difference between the two diseases, and their independence the one of the other, is clearly shown by the fact that in localities of limited extent, one of them often prevails with severity without the other appearing; while even in London, though both are at all times present to a greater or less extent, they attain respectively their highest degrees of prevalence very generally at different times.

EXPERIENCE of the MEDICAL OFFICERS of certain SCHOOLS in which VACCINATION is General.

1. In CHRIST'S HOSPITAL, HERTFORD; by *R. D. J. Evans, M.D.*

THE time I have been medical officer of Christ's Hospital, Hertford, is 16 years; and my observations extend over the whole of that period.

The average number of boys in the hospital at Hertford has been 436, of whom 152 were between 10 and 12 years of age, and 284 between 7 and 10. The average number of girls has been 69; and as they remain in the hospital until 15 years of age, there is a slight difference in the proportion of their ages.

The number of deaths in the 61 years has been 61 (of whom five were girls) from causes as under—

Scarlet fever	-	-	-	-	-	-	-	9	(But not one since August 1844).
Measles	-	-	-	-	-	-	-	9	
Low fever	-	-	-	-	-	-	-	22	
Whooping cough	-	-	-	-	-	-	-	3	
Inflammation of the bowels	-	-	-	-	-	-	-	5	
Inflammation of the lungs	-	-	-	-	-	-	-	1	
Disease of brain	-	-	-	-	-	-	-	4	
Disease of the heart	-	-	-	-	-	-	-	1	
General debility	-	-	-	-	-	-	-	2	
Rheumatic affection	-	-	-	-	-	-	-	1	
Paralysis	-	-	-	-	-	-	-	1	
St. Vitus's dance	-	-	-	-	-	-	-	1	
During absence; cause not known	-	-	-	-	-	-	-	2	

The boys are draughted four times a year to London, about 50 each time, and new boys are admitted every month to replace those advanced to the London School; so that the average time boys are kept at Hertford is about $2\frac{1}{4}$ years. All boys received are examined by the medical officer; and so are all those sent to London.

The average of boys in the infirmary is 22, and of boys absent with their friends on account of their health 13; but there are in general convalescent children who return after an absence of five or six weeks.

The average of girls in the infirmary is three, and of absentees one.

As it is a positive rule that no child shall be kept at the well wards with sickness or ailment of any description, many of those taken into the infirmary are for trivial causes, and are seldom retained there more than a week or 10 days; and many are sent to attend the schools from the infirmary.

2. In MARLBOROUGH COLLEGE, WILTS; by *Walter Fergus, M.D.*

OF 1,346 pupils of whom I have been able to obtain the particulars, all had been vaccinated excepting two. One of these boys, born in 1833, had been inoculated with small-pox; and the other was the son of a gentleman who, having doubt about the efficacy of vaccination, had the operation performed on every alternate child, leaving one-half of his children unvaccinated. He made no remonstrance when he heard that I had supplied his omission in the case of his son.

5.72 per cent. of the total number had been vaccinated twice or oftener. In two or three instances the operation was said to have been done frequently.

3.26 per cent. had small-pox after vaccination; one had small-pox in infancy, without vaccination; two had been inoculated with small-pox after vaccination without any effect.

The general health of the pupils of this College has been remarkably good, especially since the drainage has been completed and due attention paid to sanitary precautions.

The average yearly number of pupils resident in the College during the eight years that I have been medical officer, has been 414; these, with about 60 adult persons, constitute the community under my charge. The number of pupils out of school each day on account of sickness, including illnesses and injuries of sometimes extremely trivial character, has varied from 2.75 to 5.05 per cent., the higher number being caused by the presence of epidemics.

epidemics, such as scarlatina, or measles, which necessitate the prolonged stay in the sick house of each patient affected by them. During non-epidemic years the average number is 3·07 per cent., and in epidemic years 4·32 per cent., making a general average of almost 3·7 per cent. daily out of school during the eight years. Owing to the imperfection of the records, I have found it impossible to extend my inquiries beyond that time.

During this period of eight years there have been four deaths among the pupils, and one death among the adults. The cause of death in two cases was pneumonia. One boy had inflammation of both lungs, to which was added an attack of mild scarlatina. The other death from pneumonia occurred during convalescence from a rather severe attack of scarlatina, in a boy who had a year previously nearly lost his life by pneumonia. The third death was caused by a malignant pustule on the face terminating fatally in four days, by effusion on the brain; this was in a boy who had very recently entered the College. The fourth death was the result of irritation of the brain accompanied in the end by pneumonia.

The death in the adult was caused by irritation of the kidney, accompanied by albuminuria and incipient phthisis; three brothers who had lived in Devonshire had died nearly at the same age (35) of similar affection.

The diseases which have been epidemic in the college are scarlatina, measles, and mumps.

In 1849 one solitary case of scarlatina occurred, and the disease spread no further.

In 1852, from February to June, there were 46 cases of scarlatina, all of which terminated favourably, excepting the two who died of pneumonia mentioned above.

In April and May 1853, scarlatina returned to a small extent. There were 11 cases, all terminating favourably.

In 1855, from March to June, there were 63 cases of scarlatina, all of which recovered. Since then there has been no return of the disease. In 1855 the cases were generally of a more severe character than they were in 1852; but there was less tendency to affection of the kidneys in 1855, and the recoveries were in general more rapid and more satisfactory than they had been in 1853. Belladonna was given in both of the great epidemics; but it seemed to have not the slightest effect either in checking the disease or in modifying its course.

Measles has only once visited the College during the eight years. In August and September 1855, it swept through the school so rapidly, that in little more than three weeks there were 97 cases; some of them alarming from the presence of laryngitis. But they all recovered satisfactorily. Typhus has never occurred. One boy brought it with him from an infected locality; but in the College it was limited to himself, and he recovered after a long and dangerous illness.

The age of the pupils varies on admission from 8 to 16 years; the large majority being between the ages of 10 and 14; the pupils remain till they are 18 or 19, at which ages there are few left.

The principal diseases in non-epidemic years are such as might be expected in such a population, and consist chiefly of disorders of the respiratory and digestive apparatus, which in many instances, by receiving prompt attention, are prevented from assuming a more grave character.

In the College we have frequently as it were resisted the incursion of diseases which have been epidemic around us. Small-pox, scarlatina, and measles, have all been prevalent in severe and fatal forms, while the College has remained intact. I have only known one case in which a boy was removed, on account of the climate disagreeing with him; he was a native of a marshy district, and was unable to bear the bracing air of this place.

3. In the WELCH CHARITY SCHOOL, GRAY'S INN ROAD; by *Walter Griffith, Esq., F.R.C.S.*

* After a medical experience of more than 40 years, my confidence in the protection against small-pox which vaccination affords is increased rather than diminished. During that period, I have not seen a case in which the vaccine lymph has been a vehicle of any other constitutional infection. My experience is based, not merely upon private practice, but upon the number of children in the Welch School, to which establishment I have been the medical attendant for 27 years. To that institution I admit no child that does not exhibit the evidence of vaccination having been properly performed, or having had small-pox. In the year 1849, a case of small-pox occurring, the whole of the children were re-vaccinated, and nearly all came under the vaccine influence in a modified form. In 11 cases, the pustular eruption was more marked, having the character of genuine cow-pox. During the last eight years (a fair specimen of the preceding 20), 11 deaths have occurred from the following causes; five from consumption, two heart disease, two brain disease, one whooping cough, one accident (fractured skull). The number of children 200; average age, between 11 and 12.

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[Additional particulars by Dr. Griffith, Assistant Physician-Accoucheur to St. Thomas's Hospital. The school was instituted for the children of Welsh parents, born within 10 miles of the Royal Exchange. When full, the school contains 200 children; 130 boys, and 70 girls; but the number varies somewhat, owing to removals. The usual length of stay is from 8 to 14. None are admitted after 10 years of age. The average age is $11\frac{1}{2}$. Before admission, the children are carefully examined, both as to general health and as to previous existence of small-pox or vaccination. If crippled, or out of health, which rarely happens, they are rejected. If there be no sufficient mark of vaccination or small-pox, then admission is postponed until the former has been successfully practised. I believe that during the last 25 years no case of insusceptibility to the vaccine virus has occurred.

On 19th June 1849, and following days, *all* the children were *re-vaccinated*. This was considered advisable, in consequence of one of the girls having been attacked with small-pox, in a modified form. It had, apparently, been contracted about 10 days before its discovery, while the girl, being at home for a few hours on the usual holiday, had associated with children suffering from the complaint. She was of course at once removed from the school; and no other case has since occurred. She quickly recovered; and, I am informed, shows no pits or other trace of disease.

The subjoined Tables show the number of previous cicatrices, and the result of re-vaccination. All were inoculated in six places; most of them from infants. Their average age was $11\frac{1}{2}$.

GIRLS :—				BOYS :			
Previous marks	-	8 in 1	Re-vacc. vesicles 6 in 23	Previous marks	-	8 in 1	Re-vacc. vesicles 6 in 39
		7 " 1	5 " 13			7 " 3	5 " 24
		6 " 5	4 " 9			6 " 13	4 " 16
		5 " 6	3 " 4			5 " 13	3 " 13
		4 " 12	2 " 8			4 " 16	2 " 4
		3 " 9	1 " 6			3 " 18	1 " 5
		2 " 20	0 " 2			2 " 24	0 " 4
		1 " 10	11 " 1			1 " 19	11, and not vaccd. 2
Small-pox previously	"	1		Small-pox previously	"	5	
Ditto - at the time		1	TOTAL - - - 66				TOTAL - - - 112
TOTAL - - - 66, of these 2 took thoroughly.				TOTAL - - - 112, of these 9 took fully.			
				The 5 small-pox cases had respectively on re-vaccination 4, 3, 2, 2, 0, vesicles.			

Total number 178; of which 11 took fully; 157 modified; 6 failed; 4 not vaccinated.

The following points have struck me :—

The almost invariable susceptibility to the irritation of the vaccine virus. About one-fourth failed on the first attempt, a few on the second, but only six (four boys and two girls) on the third and last trial. Eleven succeeded perfectly, as shown by the pocks, their stages and duration, also by re-inoculation, and subsequent pitting. In the others, where it was modified by previously successful vaccination, the eruption ran a rapid course, but did not pass beyond the vesicular stage. In some, even this point was hardly arrived at; in others, there was a more or less distinct central depression. None but the preceding 11 matured, or were attended with fever.

The almost invariable absence of pitting in the modified forms, the only trace being a temporary stain. Five boys were at the time suffering from eczema eruptions on the face or scalp. In these the pocks ran at first through the same stage as the modified form, but healed badly, taking on the appearance of the previous eruption. A similar effect followed in seven other cases, doubtless from the same constitutional tendency. The children who had suffered from small-pox appeared equally susceptible with the others. Of the six, two failed after first, one after second, and one after third attempt.

The bastard vesicle, tried in four cases, was apparently equally powerful with the well-formed one.]

4. IN THE ORPHAN WORKING SCHOOL, HAVERSTOCK HILL; by *Hetman C. Harris*, Esq., F.R.C.S.

I HAND you herewith a copy of the statement of our deaths and removals from sickness, at the Orphan Working School, Haverstock Hill. I have been surgeon-apothecary to that Institution over 18 years; for 11 years at the City-road Asylum; and for seven years at the Asylum at Haverstock Hill. The general state of health at both localities has been most satisfactory. The children, before being admitted as candidates for election, are medically examined and approved: and again before final admission after their election. All must have been vaccinated successfully; and where the marks of prior vaccination are feeble and nearly effaced, I take some opportunity while in the school to test success by a re-vaccination. I have thus tested, in the 18 years, 47 children, and never yet got one case to run its proper course; consequently, I have never *successfully* re-vaccinated any of our children. All appear to be protected, so far as vaccination protects, from small-pox. But twice in the 18 years, occurring simultaneously with visitations of chicken-pox, three cases of modified small-pox, very mild indeed, have occurred. One case only was ill enough to be

be removed temporarily to the Small-pox Hospital, and that was in the year 1853. We have infirmaries within the building, and treat therein all illnesses but small-pox and scarlet fever: the latter, from its extreme contagiousness, is sent to the Fever Hospital.

Our children have all lost one or both of their parents; and 85 per cent. are made orphans by reason of phthisis in the parent or parents. Mild forms of strumous ophthalmia, and eruptions of eczema, herpes, and impetigo, are our most numerous classes of medical cases; and it is always from among those children who will not take any vegetable matters in their diet beyond potato that the most numerous and troublesome forms of these specified skin diseases are manifested. We have not many of them ever in any given year; but the same child, or children, suffer from similar skin eruptions, year after year. Very rarely any fresh case occurs in a child; the same old faces repeat over and over again. I ascribe the few cases of strumous ophthalmia which occur, mild as they generally are, to the high, cold, exposed position of Haverstock Hill, and to the north aspect of our playgrounds, where our children play with bare heads, summer and winter. But still, for the descendants of phthisical parents, our children have but little illness from any forms of strumous disease.

Our numbers in the City-road Asylum used to vary between 70 and 100; nearly between 85 and 90 up to 1840. After that year, the numbers rose to over 100; and in 1846, to over 140. Since we removed to Haverstock Hill, our numbers have ranged between 250 and 270. Children are eligible between seven and 14 years of age; but must be admitted before 11 years of age. I have passed my medical and surgical superintendence over more than 1,000 children, among whom I have never seen any ill effects due to vaccination. All have been carefully vaccinated; and I have never obtained a successful re-vaccination from among them. Only three cases of modified small-pox have occurred in 18 years, notwithstanding that traces of that infection have, lightly perhaps, but epidemically, visited the metropolis within the same period. All three cases were very mild, and all recovered very early and well.

I have the honour to be, also, surgeon-apothecary to the Boys' Mission Home, Mornington-crescent. In that asylum, now five years established, the children are of the ages between 7 and 14 years. All are the sons of missionaries in various stations. Many come from Africa, many from the Indies, East and West; some from parts of Eastern Asia; and some from stations in the Isles of the Pacific. Nearly half of the scholars at that school have a mixed blood, from parentage through native races; of course, oftenest on the maternal side. All, before admission into that school, must have been successfully vaccinated; and I have seen above 100 children at that school, which enlarges my experiences in quite a different channel. From the admixed blood and race of many of these children, I have no reason to doubt the efficacy of vaccination; and I will answer for its propriety, seeing that I have in no one instance known any ailment, affection, or disease attributable to it in the least degree.

My experience of the accidental eruptions which annoy the public, and vex the surgeon, is most derived from my position as Public Vaccinator for a district of the poor and very populous parish of St. Luke, Middlesex, which district comprises nearly one quarter of the parish, or about 14,000, souls; and in which the children of the parochial workhouse, and of the Lying-in Hospital, in the City-road, are both comprised. I have been a District Vaccinator ever since the first Vaccination Act was passed. Within that period I have vaccinated above 2,300 children, and have very very rarely had any complaints from others, or seen cause to suspect vaccination to be the cause of eruptions, or any other kind of diseases. It seems to me even to be absurd to take the trouble of refuting such idle talk as we sometimes hear. I do believe that the grossest exaggeration prevails in respect to ascribing the spread of eruptions to vaccination. A few cases are multiplied by gossip into numbers; and one particular is made an occasion of asserting generalities; at least, under very ample experience, such is my own sure conviction.

The most certain source of humours, eruptions, skin affections, &c. following vaccination, is the practice of mothers postponing it under any and every pretext, until, as they fancy, their infant is old enough to bear it; by which time, first dentition is actively progressing, and in unhealthy, ill-fed, ill-lodged children, eruptions known well as "tooth-rashes" (various forms of eczema, herpes, impetigo, and porrigo), are pretty frequently present. If you vaccinate at this time, these eruptions are not turned into any other disease by vaccination; but they are made worse and more protracted. On the other hand, some parents come so early for vaccination to be performed, that you cannot yet determine whether, from suckling, a crop of *Crusta Lactea*, or "milk scall," will not trouble their infants. If you vaccinate these thus early, some will break out at that particular time, hastened probably by the irritation of the vaccine vesicles; and vaccination will be charged with the whole disease.

Vaccination, again, gets discredit from the fact that no preparatory medicines are administered before it is performed; and none, except in private practice, are given after it has succeeded. The price of the "contract vaccination" precludes the furnishing of any medicines into the bargain, which is already a poor one. Besides, medical men have grown to speak slightly of this necessity; and the public now believe that no preparation is required, and no alter medicine is needed, in any case; except, perhaps, the nurse's favourite dose of "a drop of castor oil."

Allow me to suggest that if the operation of vaccination be performed between the third and fourth month; preparing the recipient by a few doses of alterative medicine, and altering faulty diet either through the mother's milk or the feeding pot, both before, at, and after the time of vaccination; taking the matter from a healthy arm between the eighth and ninth days; avoiding visible skin affections as sources of supply, even when most pressed for lymph (for better use none, than take it from an impetiginous arm), and avoiding as

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sources of supply all children able to walk, who come heated and flushed with exertion before you (for matter taken thence will produce, besides its own production, suppurative inflammation in the axillary, and perhaps also in the cervical superficial glands and abscesses), avoiding also notoriously strumous sources of lymph; and then, using these precautions, tie down the opponents to vaccination to specific points of charge against it (not try to follow and refute loose rambling gossip), and but few evils will follow from vaccination, either in actual practice, or in their wild morbid fancies.

I warmly advise all friends to the practice of vaccination to use but ordinary care and circumspection in its performance, and then no evils will detract from its merits; and no medical man can declare with truth that vaccination is not still, and has not been for more than half a century, the greatest blessing that medical science and art have conferred on mankind.

I think I should add that the present vaccine vesicles are hardly equal to those obtained 30, 20, and 15 years ago. But I do not believe that this detracts from the efficacy of vaccination.

In the 36 cases above referred to, the illnesses which occasioned death or removal were as follows:—

Phthisis, 10; scarlatina, 4; acute inflammations, 5; nervous diseases, 2; fever, 1; disease of bones or joints, 4; incontinence of urine, 4; internal strangulation, 2; stiumous and glandular affections, 4.

5. In the LONDON ORPHAN ASYLUM; by *D. De B. Hovell*, Esq., F.R.C.S.

No evidence has come before me of vaccination deteriorating the health. In assertions to the contrary due allowance is not made, in my opinion, for the difference between the "post" and the "propter hoc." I have no reason to think that vaccination predisposes to typhus, phthisis, glandular swelling, or cutaneous eruptions, or the propagation of hereditary diseases. Of course, due care must be taken that the lymph is taken from a healthy child, and not after the expiration of seven days, or, rather, 168 hours; this last is an important point. After the areola has once commenced, the matter becomes less effectual and more irritating. Also the same lymph will affect different children differently.

I have had medical charge of the London Orphan Asylum for six years; that is to say, of 400 children, from 8 to 15 years of age; and from 200 to 300 other children, from birth to 15 years, for a period of 14 or 15 years. Many children of the Orphan Asylum are necessarily delicate. Obviously, the prevailing disease among them is struma, in its various forms. Scarlet fever, typhus fever, measles, mumps, &c. have at different times prevailed among them, but never under circumstances indicating any connection with vaccination. I have twice re-vaccinated almost the entire school, with a view to test prior vaccination, and secure immunity from virulent or unmodified small-pox. Now, if vaccination had the effect of producing disease, surely some evidence would have shown itself after these re-vaccinations; but, on the contrary, the health of the children has manifestly improved, under improved ventilation, diet, hygiene, &c. The total number of deaths in 6 years has been 16; from phthisis six, from tubercular disease four, from pneumonia one, from peritonitis one, from scarlet fever one.

The other children I allude to are those of the Hackney Union, who have been as closely vaccinated, or rather re-vaccinated, and they are very healthy.

Whether secondary or tertiary syphilis be communicable by vaccination, I have had no evidence. I believe, however, that secondary systems are capable of being thus communicated. Much depends on the state of the health of the child vaccinated. The same lymph will produce a normal vesicle in one child, and one attended by severe inflammation and eruption in another.

I am decidedly of opinion that not only is the power of the lymph impaired when taken after 168 hours, or after the areola begins to show itself, but also that the protective power of the lymph is maintained, and even improved, by being taken on the seventh or even the sixth day. The cause of this is obvious; when the areola forms, the lymph becomes more or less purulent in its character.

6. In the ROYAL FREEMASONS' SCHOOL FOR FEMALE CHILDREN, WANDSWORTH; by *Thomas S. Howell*, Esq.

My professional services to the Royal Freemasons' School for Female Children have extended over the last four years, since their removal from the Westminster-road. Most of the cases that have come under my care since their residence here had been more or less under medical treatment previously. Feeling that this short period would not assist you much, I have availed myself of the kind services of the secretary (Mr. Crewe), who has given me a statement of the deaths, &c. since his appointment in 1842 up to the present time.

There are 65 children in the school, aged from 7 to 15. No child is eligible for election unless previously vaccinated.

I have no reason to connect the illness or diseases of any of the children with vaccination. And, though glandular swellings did form the principal cases requiring treatment, yet, since their residence here, those cases have all done well, which makes me believe that the locality was in fault. And, further, I have always found that their parents were unsound, and that one or both had died early in life.

Cutaneous eruptions are very rare. We have had but one case (*lepra vulgaris*) in four years; the child's relations were suffering from the disease. Only one child had been removed

moved in my time, for an old standing hip disease. The secretary's paper will give you the information you ask on the subject of deaths.*

During the present secretary's appointment (lasting 14 years), 292 children have been admitted into the school; and, during that time, two cases of small-pox have occurred. The cases did well. There have been four deaths in the last four years; one of scrofula, one of cholera (in 1854), one of phthisis, and one of effusion on the brain.

7. In the INFANT ORPHAN ASYLUM; by *RL. Pinc hing*, Esq., Surgeon to the Asylum.

STATISTICS of the POPULATION and DEATHS during 28½ YEARS (from January 1828 to October 1856, inclusive) from a RETURN prepared by the Secretary.

YEAR.	Children under Care.	Deaths.	YEAR.	Children under Care.	Deaths.
1828 - - - -	20	1	1843 - - - -	227	9
1829 - - - -	37	1	1844 - - - -	241	8
1830 - - - -	53	-	1845 - - - -	264	3
1831 - - - -	69	2	1846 - - - -	291	7
1832 - - - -	74	-	1847 - - - -	337	9
1833 - - - -	85	5	1848 - - - -	358	4
1834 - - - -	84	10	1849 - - - -	381	15
1835 - - - -	89	2	1850 - - - -	451	19
1836 - - - -	105	-	1851 - - - -	432	7
1837 - - - -	129	3	1852 - - - -	438	18
1838 - - - -	146	-	1853 - - - -	441	5
1839 - - - -	168	6	1854 - - - -	426	5
1840 - - - -	187	7	1855 - - - -	438	16
1841 - - - -	204	5	1856 (October 28) -	458	nil.
1842 - - - -	227	12	Years (28½) - - -	6,860	179
			- Per Annum - - -	237·9	6·2

Mortality at the rate of 26 per 1,000 per annum.

Children are received in this institution from the age of three months to that of seven years. The total number hitherto admitted is 1,554; so that the average stay of each ($\frac{6860}{1554}$) has been about 4½ years. Taking the aggregate strength for the 28½ years, deaths have occurred at the rate of 2·6 per cent. per annum. Of the 179 deaths, 82 were by measles, hooping cough, and scarlatina; 24 by complaints of the nervous system, besides four by teething; 23 by consumption; 18 by inflammation of lungs, air passages and bowels; five by heart disease; three by fever—typhus, bilious, or gastric; two by spinal disease; and two by scrofula.

8. In CHRIST'S HOSPITAL, LONDON; by *Thomas Stone*, Esq., F.R.C.S.

THE children of this hospital are eligible from England, Scotland, and Ireland. They belong to various classes of society, and are never admitted without previous vaccination. So far, therefore, they present a fair field for an investigation of this nature. I furnish you, on the accompanying paper, with a list of the diseases and deaths that have occurred in the London establishment during the last six years, with the number of children within its walls in each year.

The average number of children admitted for the six years amounts to 885½; the deaths, from all causes, including accidents, within and without the walls, to 31; or at the average rate of about 5½ in 1,000 annually.

In

* Return of the number of children who have died in the school in the 15 years, 1842-1856:

Description of the Fatal Diseases.									
Consumption	-	-	-	-	-	-	-	-	12
Scrofula	-	-	-	-	-	-	-	-	5
Effusion on brain	-	-	-	-	-	-	-	-	3
Cholera	-	-	-	-	-	-	-	-	2
Heart disease	-	-	-	-	-	-	-	-	2
Fever	-	-	-	-	-	-	-	-	1
TOTAL - - -									25

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In analysing this table it will be perceived that the greatest number of deaths took place from an epidemic disease, viz. scarlet fever; then phthisis pulmonalis and mesenteric disease; next cerebral inflammation; next, rheumatic heart affection, &c.

I cannot conceive it possible that vaccination could have in any way influenced the above described mortality, as it is evident that some of these affections are hereditary, and others the result of accident, exposure to cold, &c.

My experience and observations at Christ's Hospital extend over a period of more than 21 years; and I affirm that the example of the last six years is correctly illustrative of the whole of that time. I would further distinctly state, in answer to your questions, that I have never seen the slightest evidence of the transmission of hereditary and infectious diseases by the practice of vaccination; and in this vast field, I should surely have witnessed some such effect (syphilis, for instance) if such ever occurred.

The causes of death appear as follows:—Scarlatina, nine; consumption, mesenteric and spinal disease, eight; cerebral inflammation and hydrocephalus, four; rheumatism, two; dropsy, two; small-pox, one; other complaints and accidents, five.

DEATHS in CHRIST'S HOSPITAL, London, from 1750 to 1850.

Year.	Total Deaths.	Deaths from Small-pox.	Year.	Total Deaths.	Deaths from Small-pox.	Year.	Total Deaths.	Deaths from Small-pox.	Year.	Total Deaths.	Deaths from Small-pox.
1751 - -	5	-	1776 - - -	4	-	1801 - -	3	-	1826 - - -	3	-
1752 - -	5	1	1777 - - -	10	-	1802 - -	2	-	1827 - - -	4	-
1753 - -	-	-	1778 - - -	5	-	1803 - -	5	-	1828 - - -	6	-
1754 - -	3	1	1779 - - -	5	-	1804 - -	5	-	1829 - - -	9	-
1755 - -	4	2	1780 - - -	8	-	1805 - -	11	-	1830 - - -	4	-
1756 - -	1	1	1781 - - -	4	-	1806 - -	3	-	1831 - - -	1	-
1757 - -	6	0	1782 - - -	2	-	1807 - -	6	-	1832 - - -	5	-
1758 - -	5	2	1783 - - -	2	-	1808 - -	4	-	1833 - - -	8	-
1759 - -	5	2	1784 - - -	6	-	1809 - -	5	-	1834 - - -	3	-
1760 - -	6	-	1785 - - -	6	1	1810 - -	3	-	1835 - - -	6	-
1761 - -	7	4	1786 - - -	6	-	1811 - -	6	-	1836 - - -	2	-
1762 - -	5	1	1787 - - -	9	1	1812 - -	7	-	1837 - - -	5	-
1763 - -	4	-	1788 - - -	4	-	1813 - -	5	-	1838 - - -	1	-
1764 - -	10	2	1789 - - -	4	-	1814 - -	2	-	1839 - - -	3	-
1765 - -	3	-	1790 - - -	9	2	1815 - -	8	-	1840 - - -	6	-
1766 - -	7	2	1791 - - -	1	-	1816 - -	6	-	1841 - - -	5	-
1767 - -	5	-	1792 - - -	5	-	1817 - -	5	-	1842 - - -	4	-
1768 - -	11	1	1793 - - -	5	-	1818 - -	4	-	1843 - - -	-	-
1769 - -	9	-	1794 - - -	9	2	1819 - -	3	-	1844 - - -	10	-
1770 - -	5	1	1795 - - -	5	1	1820 - -	4	1	1845 - - -	4	-
1771 - -	6	-	1796 - - -	2	1	1821 - -	3	-	1846 - - -	5	-
1772 - -	4	1	1797 - - -	8	-	1822 - -	5	-	1847 - - -	2	-
1773 - -	1	-	1798 - - -	5	-	1823 - -	5	-	1848 - - -	7	-
1774 - -	5	1	1799 - - -	6	-	1824 - -	4	-	1849 - - -	6	-
1775 - -	4	-	1800 - - -	8	1	1825 - -	7	-	1850 - - -	5	-
Total from 1751 to 1800 - - -				264	31	Total from 1801 to 1850 - - -				235	1
Rate per centum per annum - - -				96	11	Rate per centum per annum - - -				59	0025

Note.—Our chief clerk, Mr. Trollope, informs me that the average number of boys in Christ's Hospital, London, from 1750 to 1800, would be about 550 per annum; and that the average number from 1800 to 1850 would be about 800; so that the good effects of the blessing of vaccination are still more extraordinary. There does not seem to have been any rule at Christ's Hospital before the time of the introduction of vaccination requiring the previous inoculation of a boy prior to his admission. The only manner in which I can account for the *small* mortality occurring, when variola did prevail, is by supposing that many of the children might have already had the disease naturally or by inoculation, and by the fact that directly a child fell ill with the disease he was immediately removed to an isolated building, and the spread of the disease was thereby prevented. The age of admission into the hospital is from 7 to 10 years, and throughout the whole of the period has been subject to little variation. There has always been a preponderance of older boys in London and younger boys at Hertford, and since the year 1837 all boys upon admission have been sent to Hertford without exception. There have consequently been very few boys in London under 10 or 11 years of age, whilst the number at Hertford exceeding that age has been equally few. With a few exceptions, the boys quit the school on attaining 15 years of age.—T. S.

(K.)

NATIONAL AND OFFICIAL EXPERIENCE OF VACCINATION.

D E N M A R K.

1. KINGDOM.

IN reply to sundry questions bearing upon the influence of vaccination, submitted by Her Britannic Majesty's Government, the Board of Health begs to state as follows:—

I. Vaccination must be regarded as the best means that has hitherto been discovered for the preservation from small-pox. Experience proves that but a comparative small number of those vaccinated take the disease, and even then it is generally found to be of a milder form (varioid), so that the mortality from small-pox, which previous to the introduction of vaccination amounted to 50 per cent. of those affected, has since the introduction of vaccination fallen to a very low amount, say from 1 to 5 per cent. during the various epidemics. It must be observed that our experience confirms the opinion, that the anti-variola powers of the vaccine virus are wearing out, or perhaps, even entirely disappearing, after a limited number of years, as during the epidemics of later years, small-pox attacked a comparative greater number (and in a more violent degree) of those who had been vaccinated from ten to fifteen years ago, than of those vaccinated within a more recent period. This assertion is corroborated by the fact, that while revaccination, generally speaking, is unsuccessful, or, at any rate, only produces imperfect (spurious) pustules, in those vaccinated a few years ago, the reverse is the case with those who have been vaccinated from 10 to 15 years ago. As an instance, we may quote that on the 11th November this year, 28 boys of from 14 to 15 years of age were vaccinated in the Vaccination Establishment of this town, and out of these, who had all been vaccinated in the first biennium, 24 had the vaccine vesicles fully developed, and only four had spurious ones.

II. Our experience has not demonstrated that vaccinated individuals, in becoming less susceptible of small-pox, should become more susceptible of typhus, other contagious diseases, scrophulosis, phthisis, or that their system should in any shape be acted upon in any mischievous degree. Experience furnishes us even with a negative proof of the reverse. At the commencement of the present century vaccination was ordained by law and introduced into the Feröe Islands, as it was in the rest of Denmark, yet among the population of these islands, amounting to 8,000, diseases such as scrophulosis, phthisis tuberculosa, syphilis, and febris intermittens are quite unknown.

III. The experience which we have acquired in this country does not lead to the supposition that lymph taken from true vaccine can be the means of communicating any scrophulous or constitutional contagion. As for syphilis, particular attention has always been paid in not taking lymph from an individual suffering or suspected of suffering from that disease. During the 50 years that have elapsed since the introduction into Denmark of vaccination, only two syphilitic cases have occurred that appeared questionable—one after vaccination, and one after revaccination. Such cases may, as in other countries, have given rise to the notion that they originated in vaccination, but they are few and far between, and not supported by facts.

IV. It is well known that vaccination has been ordained by law in this country, so that no child can be admitted into a school, or present itself for confirmation, unless a certificate of having been vaccinated be produced, and experience has proved the efficacy of the law. The repeated vaccination (or revaccination) is also enjoined for soldiers and sailors in the Navy, and experience has likewise shown the successful results of this law, inasmuch as these two classes of individuals during several variolous epidemics have almost entirely escaped the contagion.

COPENHAGEN.

Year.	Popula- tion.	Mor- tality.	Excess of Deaths over Births.	Excess of Births over Deaths.	Died of Small- pox.	REMARKS.	Year.	Popula- tion.	Mor- tality.	Excess of Deaths over Births.	Excess of Births over Deaths.	Died of Small- pox.	REMARKS.		
1750	-	60,000	4,317	1,571	-	1,457	The population is by calculation.	1792	-	2,645	-	878	155		
1751	-	-	2,798	17	-	80		1793	-	70,495	2,433	-	851	139	
1752	-	-	2,594	2	-	113		1794	-	-	3,123	-	146	452	
1753	-	-	2,845	300	-	53	150 carried off by the measles this year.	1795	-	-	3,524	475	-	248	Scarlet fever.
								1796	-	83,604	3,045	18	-	357	
								1797	-	-	3,278	2	-	423	
1754	-	-	2,542	-	221	9	Inoculation first introduced into Denmark. (Countess Bernstoff, by Dr. Argent, of London.)	1798	-	-	3,717	366	-	386	
								1799	-	-	3,601	194	-	54	
								1800	-	-	3,689	308	-	35	Scarlet fever.
1755	-	-	3,821	1,152	-	1,117	Two inoculation hospitals erected, each for six persons.	1801	-	91,631	4,542	-	1,357	486	Vaccination first introduced. A Royal Commission of Vaccination appointed.
1756	-	-	2,792	139	-	125		1802	-	-	3,262	-	353	73	Vaccination establishment erected at Copenhagen.
1757	-	-	3,700	1,100	-	13	Measles and dysentery prevailed this year.	1803	-	-	3,442	-	237	5	The Commission of Vaccination recognise the protective powers of Vaccination.
1758	-	-	4,761	2,354	-	13	Likewise very fatal. 420 carried off by the measles.	1804	-	-	3,688	145	-	13	
1759	-	-	4,355	2,296	-	1,079	Scarlet fever showed itself epidemically for the first time, and carried off 1,000.	1805	-	-	3,585	-	265	5	
								1806	-	-	3,529	-	361	5	
								1807	-	-	4,307	597	-	2	Bombardment of Copenhagen by the English.
1760	-	-	3,228	746	-	118	Christian VII., then Crown Prince, inoculated. The inoculation hospitals closed for want of applicants.	1808	-	-	4,606	1,120	-	46	
								1809	-	-	3,872	647	-	5	
								1810	-	-	2,975	-	810	4	Decree ordering vaccination was promulgated this year.
1761	-	-	2,593	123	-	4		1811	-	100,975	3,604	154	-	-	
1762	-	-	4,512	2,223	-	7	Measles and Typhoid fevers prevailed.	1812	-	-	3,410	101	-	-	
1763	-	-	5,034	2,707	-	167		1813	-	-	3,764	493	-	-	
1764	-	-	3,675	1,028	-	480		1814	-	-	3,711	458	-	-	
1765	-	-	2,973	432	-	138		1815	-	-	3,409	216	-	-	
1766	-	-	3,923	1,286	-	42	Dysentery prevailed.	1816	-	-	2,956	-	169	-	
1767	-	-	3,361	404	-	6		1817	-	-	2,907	-	152	-	
1768	-	-	2,912	-	49	27		1818	-	-	2,554	-	398	-	
1769	-	70,495	4,434	1,525	-	1,219	First census taken.	1819	-	-	2,319	-	862	-	
								1820	-	-	2,576	-	501	-	
1770	-	-	3,770	860	-	22	An inoculation establishment erected outside the city for 48 persons; 16 payers and 32 poor.	1821	-	-	3,459	-	94	-	
								1822	-	-	3,345	-	842	-	
								1823	-	-	2,852	-	542	-	
								1824	-	-	3,212	-	515	41	
								1825	-	-	3,280	-	260	12	The Vaccination Commission abolished and vaccination placed under the control of the Board of Health.
1771	-	-	3,144	487	-	8		1826	-	-	3,588	-	9	29	
1772	-	-	4,209	1,605	-	22	Measles prevailed severely.	1827	-	-	3,410	30	-	4	
1773	-	-	3,229	435	-	190		1828	-	-	3,547	-	487	1	
1774	-	-	2,273	-	647	116		1829	-	-	3,890	431	-	29	Small-pox epidemic.
1775	-	-	3,220	311	-	276		1830	-	-	3,794	449	-	3	
1776	-	-	2,825	56	-	86	Scarlet fever very virulent.	1831	-	-	3,678	86	-	-	
1777	-	-	2,894	-	292	7		1832	-	-	3,389	-	18	3	
1778	-	-	2,884	-	44	278		1833	-	-	3,741	-	146	19	Re-vaccination become general in Maymont Quarantine for small-pox abolished.
1779	-	-	3,159	138	-	283		1834	-	119,292	3,293	-	335	26	
1780	-	-	2,673	-	362	98		1835	-	-	3,862	6	-	434	
1781	-	-	3,741	756	-	174	148 died of the measles, which prevailed this year.	1836	-	119,591	2,848	-	789	81	Re-vaccination ordered for the Army.
1782	-	-	4,122	1,422	-	332		1837	-	-	3,369	-	234	1	
1783	-	-	2,917	-	118	123	The inoculation establishment outside the town closed, and its property transferred to the lying-in hospital.	1838	-	-	3,462	-	97	2	
								1839	-	-	3,108	-	513	-	
1784	-	-	3,004	-	220	77		1840	-	-	3,054	-	487	2	
1785	-	-	3,762	171	-	427		1841	-	-	3,327	-	119	-	
1786	-	-	4,001	867	-	193	Typhus. Small-pox epidemic at Elsinore. (See De Meza's Acta Med. Hav. vol. iii.)	1842	-	-	3,404	-	207	35	
								1843	-	-	3,498	-	263	111	
								1844	-	-	3,622	-	373	83	Re-vaccination ordered for the Navy.
1787	-	-	3,484	419	-	136	Scarlet fever prevailed.	1845	-	126,787	3,515	-	625	7	
1788	-	-	3,733	675	-	185		1846	-	-	4,126	92	-	-	
1789	-	-	3,849	670	-	323		1847	-	-	3,642	-	468	-	
1790	-	-	2,313	-	1,179	140		1848	-	-	3,521	-	941	2	
1791	-	-	3,649	290	-	297	Measles.	1849	-	-	4,044	-	213	7	
								1850	-	129,695	3,563	-	1,083	-	

Until 1808, the mortality is stated according to Callisen (see his "Physical and Medical Observations on Copenhagen"); until 1820, according to the statistical returns; after 1820 and till 1850, according to the tables of mortality drawn up by the police; and afterwards, by the city physician, and transmitted to the Board of Health. There is a not inconsiderable discrepancy, particularly in earlier years, between these tables and the lists drawn up by the Church authorities, on which the details of the statistical tables in a great measure are based.

2. DUCHIES OF HOLSTEIN AND LAUENBURG.

In reply to the first question—

“Does experience prove that any great majority of successfully vaccinated persons have escaped the small-pox, and that they have almost completely been protected from the fatal effects of this disease?”

Vaccination has been practised in the Duchy of Holstein since the commencement of the present century, but has only been made compulsory by Government since 1811. From that time, nevertheless, till within the last years, some sporadical cases have occurred in the rural districts, whereas the disease has assumed a more virulent character in populous places, such as Kiel, Rendsburg, &c., where the mortality of the infected amounted to from 7 to 12 per cent. From a minute investigation of the facts of the case it appears (and the Holsteinic Board of Health concur in the same view) that it would be premature, in the absence of any further evidence than these experimental trials, to answer the question in the negative.

It has been found that the small-pox disease during times of epidemic has almost always been introduced by contagion, either of persons or infected objects, and then mostly spread by contagion, and that there is at such periods a certain predisposition to such disease. Although it is a well established fact that individuals vaccinated, as well as unvaccinated, have taken the disease, yet there is a material difference in the course of the disease and its effects, inasmuch as the vaccinated, almost without exception, catch the disease in the modified form of milder small-pox, while the mortality of the unvaccinated shows a much more fatal result. In the year 1852-3, for instance, there were in the hospital at Kiel 218 patients suffering from the disease, out of which 152 were vaccinated and 66 not vaccinated; and while the disease swept away 21 (about 32 per cent.) of the latter, only 9 (6 per cent.) of the former fell victims to it. Now, taking into consideration that out of the nine cases of death among those vaccinated, eight were not the effects of the small-pox solely, but arose from a complication with other diseases, such as tubercular disease in the kidneys, dyscrasie from heavy drinking, and typhus, the causes of death of the vaccinated and unvaccinated individuals will be in a proportion of 32 to 72. The protection which vaccination affords from the fatal effects of small-pox seems thus, from the above numbers, to be established beyond a doubt.

The fact that even vaccinated persons may in some cases be infected with the genuine, and not the modified small-pox, loses much of its importance by a circumstance which experience has demonstrated does not admit of any contradiction, namely, that even individuals who have gone through the genuine small-pox, and who bear the marks unmistakeably upon them, may catch the disease *de novo*.

It seems thus that not merely the small-pox disease, but also vaccination, in the course of time, lose their anti-variolous powers. The physicians of Holstein have not arrived at any unanimous conviction as to its durability. The prevailing opinion of physicians on the subject is, that vaccination loses its protective powers after a lapse of from 10 to 15 years, more especially if the different stages of puberty should fall within such periods.

The first question must therefore be answered in the affirmative, as far as experience goes in the Duchy of Holstein.

During the epidemic of 1841 in the Duchy of Lauenburg more than 100 individuals took the disease; and of these three, who had not been vaccinated, all died; while out of those who had gone through that operation only one died, as far as could be ascertained, and this individual had, moreover, been sickly for a long time previous.

In reply to the second question—

“Does experience furnish any grounds for supposing that vaccinated persons, whilst less susceptible of small-pox, are more exposed to typhoid fevers or other diseases, for instance, scrofula or consumption; or that vaccination has exercised any noxious influence upon the state of their health?”

In the absence of statistical information on this subject, the solution of this question can only be sought for in data which experience has brought to light. There is, however, a general conviction that no connection is traceable of the vaccine with the above diseases, and that no increase of the latter has taken place consequent upon the introduction of the former.

In reply to the third question—

“Does experience afford any reason for assuming that syphilitic, scrofulous, or other infectious diseases can be transferred to the vaccinated person through the lymph taken from one of Jenner's genuine vesicles, or that any medical man of standing, with the object of vaccinating, can inoculate any other disease without his knowledge?”

This question must be answered in the negative, as the experience which has been gained in the Duchies of Holstein and Lauenburg does not furnish sufficient grounds for answering it otherwise.

It must be observed that if importance be attached to the expressions in the question, “Jenner's

Appendix, No. 6. "Jenner's genuine vesicles," and "medical practitioner of standing," the question must be answered unconditionally in the negative.

The observation which has been made by experienced medical men that cutaneous eruptions, pustules, and other symptoms of scrofula on the head or in other parts of the body, and which generally make their appearance after vaccination, must be considered as evidence to the contrary, cannot be admitted by the Board of Health, as, on the one hand, there has always been some symptoms of dyscrasie in all such cases, and, on the other hand, the sudden appearance of scrofulous symptoms in fever, and more especially exanthematous fevers, is no rare occurrence.

Taken from this point of view, we are warranted in asserting that the above-mentioned acute and febrile diseases do not afford sufficient proof of the origin of scrofula in the above-mentioned cases; whereas it is more likely that they have formed a germ by which a latent and concealed indisposition has been developed, and the outward symptoms of the disease been produced.

In reply to the fourth question—

"Does experience warrant us, independently of special grounds in certain cases, in recommending the practice of vaccination as a general measure?"

This question has been decided in the affirmative, as being based upon the results of experience, which we have explained in replying to the preceding three questions. The country physician for the Duchy of Lauenburg makes the observation, that it is only by early vaccination that the numbers of the unvaccinated can be kept so low that the latter, in cases of small-pox epidemics, may be protected by vaccination, and further bounds be set to the spread of the disease. Medical men of experience and practice, who have had an opportunity of watching the operation upon the general state of health, have, without any exception, come to the conclusion that general vaccination at an early period ought to be strongly recommended, and that the attempts which have lately been made in various quarters to represent it as useless, and even dangerous, ought to be counteracted for the sake of science and humanity.

3.—EXTRACT from an Explanatory Paper accompanying the Official Answers from Denmark.

THERE can be no doubt that the small-pox was known in Denmark at an early period of the middle ages, and probably even previous to that time, although the history of this or any other country makes no mention of its first appearance. One thing, however, is certain, and that is, that Denmark, like other countries, suffered through a long succession of years, and especially during the century on which the question now turns (the 18th), from the dreadful ravages of this disease, and that she has, in a full measure, borne her share in the 45,000,000 who fell victims to the scourge; this being the number of lives, it is calculated, which Europe lost from the disease, in the course of one century only, out of 160,000,000.

The population of Denmark was in 1769	-	814,238
" " " 1801	-	925,680
" " " 1834	-	1,223,797
" " " 1840	-	1,283,027
" " " 1845	-	1,350,327
" " " 1850	-	1,407,747

Of great epidemics in Denmark, history mentions:—that of 1592 (*see History of Christian IV., by Stange, vol. i. p. 62*); that of 1656 (described by Th. Barholin, in *Cista Medica*, p. 590); that of 1716 (*see Botticher's Morborum Malignorum Descriptio*, p. 19); and perhaps several others; but we search in vain for statistical returns exhibiting the number of individuals cut off by these epidemics. The disease raged year by year in the towns as well as in the country, and although it attained a frightful height every fourth and seventh year, attended with typhoid fevers, scarlet fever, and especially measles, yet our annalists did not feel themselves called upon to make any returns of an occurrence so common as this; the merits of the science of statistics, as applied to sanitary purposes, were at that time too little appreciated. In the face of such melancholy considerations it is satisfactory to be enabled to report that this disease, since the universal introduction of vaccination (1810), has not only lost its worst sting, but that the disease has not shown itself in Denmark for more than 15 years. In the years 1824 and 1834, and in the years following and preceding these periods, small-pox appeared in the provinces as well as in Copenhagen, but it was not of a nature to excite any uneasiness.

The annals of Iceland report, that small-pox raged in that country:—(1) in the years 1241 and 1242; (2) in 1257 and 1258 (very severely, carrying off several thousand individuals); (3) in 1291 (likewise); (4) in 1310–11 (1,600 are said to have died of the disease); (5) in 1347–48 (very severely); (6) in 1379–80; (7) in 1430–32 (very severely, the loss of lives is stated to have reached 8,000); (8) in 1462–63 (about 1,600 died); (9) in 1472 (not very fatally); (10) in 1511 (very severely); (11) in 1555–56 (very severely,

severely, 2,650 are said to have perished); (12) in 1574 (likewise severely); (13) in 1590-91 (700 died); (14) in 1616 (the disease was brought by an English vessel, raged severely, and carried off several thousand individuals); (15) in 1635-36 (somewhat milder in form than the last); (16) in 1655 and 1658 (brought by an English vessel to Westfjord); (17) in 1670 and 1672 (tolerably mild); (18) in 1707 (the great epidemic: the disease is said to have been brought into the country by some wearing apparel belonging to an Icelandic student who fled from Copenhagen for fear of the small-pox, took that disease on board the vessel, died and was buried in Norway (see Stephenson's *Iceland* in the 18th century). Of the then population of Iceland, somewhat exceeding 50,000, this disease carried off, according to reports, 18,000. In that country, where the parishes are so thinly populated, there were churches in the churchyards of which 30, 34, to 40 individuals were interred in one day. It was no unusual occurrence that persons having once gone through the disease, and bearing the marks upon them, were attacked again and died. (19) in 1785, 86, and 87 (1,425 died); this was the last time the disease occurred in that island during the last century.

Since the introduction of vaccination, small-pox has only once occurred in Iceland, namely, in 1839, when it was brought to the northern division of the island. It was very mild, and was prevented from spreading to the southern division by measures of isolation. Several individuals were seized with the disease who had had it in 1785. Of the population of the town of Reikavick, and its environs, amounting to from 1,200 to 1,300, of whom the greater part were vaccinated, only 15 died. At a fishing cove, however, where only a few had been vaccinated, 40 died out of a population of about 600. The disease continued to prevail in 1840. The population of Iceland, which, in the 12th and 13th centuries, is said to have been 120,000, was 46,201 in 1769, and 57,094 in 1840.

Small-pox was first brought to Greenland, in the year 1734, by a vessel from Denmark. Nearly two-thirds of the whole population of that country (which at that time was from 6,000 to 7,000) were swept away by this disease. Of 200 families living within a circle of from two to three miles from the Danish settlement into which the small-pox was brought, not 30 remained alive. Since the introduction of vaccination, no fresh cases have occurred in that part of the realm.

The Board of Health, being unable to furnish any details as to small-pox and its mortality in the kingdom outside of the capital, as well as in the colonies of Iceland and Greenland, hopes to give more satisfactory information in respect of Copenhagen. This it has embodied in the annexed lists, extending over a period of 100 years (from 1751 to 1850), and exhibiting the fluctuations of the population, the annual mortality, the proportion of deaths to births, the number of individuals that have annually died of small-pox, the prevalence of other kinds of disease at such periods, and the adoption of measures calculated to exercise any influence upon the greater or lesser severity of the small-pox.

The immense number of lives which Denmark has lost from small-pox; the little confidence reposed by the people in the system of inoculation introduced into Denmark in 1754, despite of all the exertion of the Government and private individuals, and although it evidently diminished the severity of the disease, and many had escaped it—Callisen states that, out of 900 whom he inoculated, none died—the trifling influence which this method generally exercised upon the mortality, coupled with the objection which might with propriety be raised against it, namely, that it retained the contagion; all these circumstances naturally combined to direct public attention to the discovery of Jenner in 1793, that vaccination with cow-pox protected the human body from small-pox, and the news was received with enthusiasm in the capital. Herholdt, Scheil, E. Viborg, and Rafn endeavoured to disseminate a knowledge of this discovery by written notices, and 34 of the most respectable physicians of Copenhagen formed themselves into a society to collect and investigate all grounds and arguments in favour, and in disfavour, of this anti-variolous agent as proposed by Jenner. A commission, composed of medical men (Claskow, Guldbrand, Callisen, Winslov, and Viborg), was, at the same time, appointed by the Government, having the same object in view, and being instructed to recommend the adoption of means calculated to further a case of so much importance as this. After the lapse of but few years, the private commission, as well as that appointed by the Government, although many of the members had from the commencement entertained a doubt as to the doctrine of Jenner, arrived unanimously at the firm and irrefutable conviction that vaccine virus was a preservative from small-pox. Through the perseverance and zeal of the Royal Commission, vaccination was speedily introduced into all the provinces of Denmark, and the practice ordained by legal enactments, so that Denmark certainly deserves the encomium of having in this respect taken precedence of all other countries.

The district physicians, and the country physicians (in Copenhagen, the city physician), are charged with the superintendence of the gradual progress of vaccination, under the control of the Board of Health, to which all returns on vaccination are to be transmitted. Denmark Proper is divided into nine sanitary districts, having 71 district physicians, besides seven town physicians. At Copenhagen, a vaccination establishment has been erected, in which any applicant may be gratuitously vaccinated. The district physician makes an annual circuit in his district for the purpose of vaccinating in the towns such persons as may choose to apply. In travelling, they make arrangements so as to return to each town on the day on which they may judge of the success of the vaccination. The physician has free conveyance on such circuits, and receives 24/ (*i.e.* 7*d.*) for every individual successfully vaccinated, which expenses are paid by the district. With the view of constantly preserving the lymph fresh, the district physicians are permitted to request

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the attendance of children living in their district, and receiving public instruction, training, or succour. The vaccinators are bound to deliver, to every person who has successfully gone through vaccination, a certificate, according to a certain form, and to inscribe the names of those whose vaccination is found to be genuine in a register authorised for that purpose. None can be admitted into any educational establishment (with the exception, however, of ragged schools), nor be bound apprentice to any trade or profession, nor be received as an inmate into any of the establishments for the poor, nor receive relief therefrom, nor be married or admitted to confirmation, unless he or she has been vaccinated, or has had the small-pox. Soldiers and sailors belonging to the navy are subject to the same regulation. Should any contagion make its appearance in the villages, every person living in such village, and who has not been vaccinated, nor had the small-pox, shall, without exception, submit to vaccination. In respect to the towns, this enactment is confined to the inmates of that or those houses in which the contagion shows itself. All inoculation with small-pox is strictly prohibited. Since 1820, permission to vaccinate must not be granted to any but medical men, with the exception of Iceland, the Feröe Islands, and Greenland, where the local circumstances are of such a nature as to necessitate the practice by non-medical men.

In Iceland, which has one country physician and eight district physicians, it is enacted that every clergyman, after having received the necessary instruction of the country or district physician, shall be vaccinator *ex officio* in his parish, and keep a register of those vaccinated. Should his parish be very extensive, he may call in the aid of one or two efficient persons, known to the district physician, to act as assistant vaccinators. All matters bearing on vaccination are under the control of the district physician, whose duty it is to watch its progress, to provide for a proper supply of vaccine matter from Copenhagen in proper time, provided it cannot be collected on the spot; to receive the reports of the vaccinators, and to forward them to the country physician for transmission to the Board of Health at Copenhagen. The lower classes are strictly enjoined to appear for purposes of vaccination at such time and at such place as the vaccinator of the district may decide upon. The expense of vaccination, and especially the payment of 12/ (4½ d.) for each individual successfully vaccinated, inclusive of the certificate, are paid out of the public purse.

The operation which these measures have had on the extension of vaccination, may be gathered from the following lists, showing the number of those vaccinated in the Kingdom and in Iceland from 1802 till 1850.

THE KINGDOM.

Year.	Number of those Vaccinated.	Births.	Year.	Number of those Vaccinated.	Births.	Year.	Number of those Vaccinated.	Births.	Year.	Number of those Vaccinated.	Births.
1802	4,570	31,575	1815	21,300	35,861	1827	28,419	36,954	1839	23,909	38,722
1803	7,600	32,617	1816	25,755	32,225	1828	24,876	38,794	1840	—	41,033
1804	4,609	32,091	1817	26,385	32,553	1829	29,030	37,808	1841	—	—
1805	16,304	32,901	1818	27,910	32,255	1830	31,075	37,204	1842	27,866	41,295
1806	14,989	30,610	1819	26,095	32,377	1831	—	38,432	1843	31,008	41,336
1807	5,227	31,734	1820	28,544	30,653	1832	—	34,947	1844	30,238	42,586
1808	25,421	31,487	1821	21,193	32,714	1833	—	41,105	1845	32,330	43,425
1809	8,012	30,324	1822	28,962	31,755	1834	—	42,425	1846	31,843	43,000
1810	32,050	31,566	1823	29,439	34,599	1835	—	41,032	1847	30,330	44,153
1811	26,170	31,978	1824	38,334	33,723	1836	—	39,751	1848	29,073	44,703
1812	21,808	31,269	1825	39,279	34,249	1837	—	39,485	1849	30,937	45,637
1813	21,251	30,686	1826	28,775	39,826	1838	25,000	39,509	1850	—	—
1814	21,406	32,035									

ICELAND.

Year.	Number of those Vaccinated.	Births.	Year.	Number of those Vaccinated.	Births.	Year.	Number of those Vaccinated.	Births.	Year.	Number of those Vaccinated.	Births.
1804	1	—	1816	57	1,244	1828	571	2,081	1840	—	2,077
1805	15	—	1817	1,230	—	1829	452	2,268	1841	—	2,185
1806	402	—	1818	979	—	1830	1,266	2,434	1842	278	2,169
1807	130	—	1819	474	1,326	1831	—	2,609	1843	110	2,066
1808	—	—	1820	635	1,369	1832	—	2,516	1844	406	1,983
1809	—	—	1821	301	1,629	1833	—	—	1845	749	2,107
1810	38	—	1822	125	1,667	1834	—	2,552	1846	—	2,163†
1811	129	—	1823	—	—	1835	—	2,138	1847	—	1,978
1812	—	—	1824	—	—	1836	—	2,333			
1813	630	—	1825	2,133	—	1837	—	1,952	1848	652	2,193§
1814		—	1826	1,528	—	1838	481	1,911*	1849	1,214	2,217
1815		915	1827	635	1,888	1839	1,451	1,899†	1850	—	—

* 647 were vaccinated.

† 1,891 were vaccinated.

‡ Vaccination could not be practised on account of prevailing diseases, especially measles. In 1846 the deaths exceeded the births by 1,166.

§ The Report on Vaccination is not complete.

Upon

Upon a comparison of the number vaccinated in the Kingdom with that of the births, it appears that the provisions relating to vaccination are carried into effect tolerably efficiently, for if we deduct from the births those born in the Sleswick districts in Jutland—the returns of which are transmitted to Kiel—the not inconsiderable number of still-born children, and the still more considerable number of children that die before they attain the proper age for being vaccinated, and if we further add the number of those admitted in consequence of the non-transmission of the returns (sometimes for entire provinces), the difference will not be great.

The small-pox epidemics of 1824 and 1835 tended to prove that vaccination afforded immunity from small-pox only for a limited time, and re-vaccination became therefore general among the enlightened classes. The Government has since ordained that all soldiers, as well as sailors belonging to the Navy, shall undergo re-vaccination, and that the same rule shall extend to all sailors proceeding to Greenland in the trading vessels of the Royal Greenlandic Society, and to all children in schools under the superintendence of the Poor Law Guardians, previous to their leaving school for the purpose of being confirmed.

SWEDEN AND NORWAY.

1. SWEDEN.

I. EXPERIENCE has shown, in Sweden, that successful vaccination confers on persons subject to its influence a very large exemption from attacks of small-pox, at least for several years (the time to be fixed by further experience). In vaccinated persons affected by small-pox, its decursus (course) is in most cases modified, mild, and without danger to life and future health. In the relatively few cases where the opportunity (susceptibility) for small-pox continues totally unchecked by previous apparently successful vaccination, this operation of course does not confer security against death by that disease.

II. The experience of Sweden has given no reason whatever for the belief or suspicion that vaccinated persons, in being rendered less susceptible of small-pox, become more susceptible of typhoid fever, or of any other infective disease, or of scrofula and phthisis, or that their health is in any other way disadvantageously affected.

III. No positive fact, authorising the belief or suspicion that lymph from a true Jennerian vesicle may be the vehicle of syphilitic or other constitutional infection, has been reported to the Swedish General Board of Health; but the law concerning vaccination prescribes, as a due precaution in this respect, that vaccine matter must never be taken from persons who, after careful examination, are not found to be exempt from syphilis and other constitutional disease, or from children whose parents are known or suspected to be, or have been, infected with any such disease. That a duly educated medical practitioner ever should inoculate, by mistake, some other disease instead of the proposed vaccination, is not admissible.

IV. The law in Sweden concerning vaccination prescribes, as a general rule, that children should be vaccinated before the age of two years. When small-pox is epidemic, vaccination ought to take place even in the first months of life. Re-vaccination, generally *recommended* at the age of 15 years, is *prescribed* for recruits of the army and navy. Experience has justified all those prescriptions.*

* The above answers from the Royal Swedish General Board of Health are stated by the Board to be founded, not only on the official Reports which the Board during a period of forty years (1817-1856) has received from all the vaccinators in the kingdom, but also on opinions now given by the Medical Society of Sweden, and by several medical men especially competent in the subject. They may consequently be justly considered as the true results of Swedish experience in vaccination. The Board also transmit from the Register Office of the kingdom a summary account of the population, births, and deaths in Sweden, during the last 107 years; distinguishing those due to small-pox. This document alone gives decisive answers to the first two and most important questions considered; and the Board believe they need no comment to prove, beyond doubt, the great influence of vaccination in Sweden as an invaluable although not absolute preventive against one of the most destructive diseases that ever afflicted mankind.

SMALL-POX Death Rates for the Kingdom of *Sweden* for the 107 years, 1749—1855.— Calculated by Mr. *Haile* from facts officially communicated.

Year.	*Small-pox Deaths per Million of Living Population.	Year.	Small-pox Deaths per Million of Living Population.	Year.	Small-pox Deaths per Million of Living Population.	Year.	Small-pox Deaths per Million of Living Population.	Year.	Small-pox Deaths per Million of Living Population.	Year.	Small-pox Deaths per Million of Living Population.
1749	2,543	1767	2,102	1785	2,361	1803	611	1821	14	1839	621
1750	3,494	1768	5,314	1786	311	1804	605	1822	4	1840	207
1751	3,106	1769	5,069	1787	823	1805	449	1823	15	1841	75
1752	3,714	1770	2,581	1788	2,534	1806	613	1824	226	1842	18
1753	4,395	1771	2,152	1789	3,137	1807	884	1825	449	1843	3
1754	3,735	1772	2,674	1790	2,734	1808	757	1826	223	1844	2
1755	2,546	1773	5,979	1791	1,421	1809	1,007	1827	212	1845	2
1756	4,226	1774	1,020	1792	878	1810	347	1828	90	1846	0½
1757	5,475	1775	631	1793	942	1811	291	1829	19	1847	4
1758	3,783	1776	737	1794	1,757	1812	167	1830	36	1848	21
1759	2,074	1777	943	1795	2,955	1813	225	1831	211	1849	99
1760	1,885	1778	3,178	1796	1,963	1814	126	1832	213	1850	395
1761	3,002	1779	7,196	1797	751	1815	191	1833	387	1851	707
1762	4,879	1780	1,593	1798	585	1816	277	1834	352	1852	433
1763	6,011	1781	699	1799	1,609	1817	96	1835	147	1853	78
1764	2,335	1782	1,165	1800	5,126	1818	120	1836	45	1854	57
1765	2,387	1783	1,832	1801	2,563	1819	63	1837	117	1855	11
1766	2,065	1784	5,810	1802	644	1820	55	1838	583		

* *N.B.*—From 1749 to 1773, the mortality from measles is included in the small-pox death-rate.

POPULATION, Births, and Deaths in Sweden (Finland excepted) during Half a Century before and Half a Century after the Establishment of Vaccination, extracted from the original Reports of the Clergy to the Royal General Registry Office.

YEAR.	Population at the end of the Year.	Born Alive during the Year.	Mortality during the Year.			YEAR.	Population at the end of the Year.	Born Alive during the Year.	Mortality during the Year.		
			Total.	From Small- pox. See Note (*)).	From Typhus and Typhoid Fever.				Total.	From Small- pox.	From Typhus and Typhoid Fever.
1749	—	59,483	49,516	*4,153	3,948	1803	—	74,644	56,577	1,464	6,265
						1804	—	76,443	59,584	1,460	6,860
1750	—	64,511	47,622	*6,180	3,581	1805	2,427,408	76,552	56,663	1,090	6,023
1751	1,785,727	69,291	46,902	*5,546	3,398	1806	—	74,581	65,728	1,482	7,179
1752	—	61,973	49,467	*10,302	2,857	1807	—	75,842	62,318	2,129	8,065
1753	—	66,007	43,905	*8,000	3,126	1808	—	73,963	82,311	1,814	12,527
1754	1,837,314	68,795	48,645	*6,862	3,505	1809	—	61,300	93,532	2,404	21,171
1755	—	70,008	51,090	*4,705	3,609						
1756	—	67,987	52,062	*7,858	4,320	1810	2,377,851	78,916	75,607	824	9,193
1757	1,870,372	61,675	55,829	*10,241	5,502	1811	—	84,862	69,216	698	7,430
1758	—	63,262	60,527	*7,104	5,566	1812	—	81,079	73,095	404	8,058
1759	—	63,865	49,162	*3,910	5,413	1813	—	72,021	66,266	547	6,261
						1814	—	75,837	60,959	308	5,555
1760	1,893,248	68,384	46,721	*3,568	5,339	1815	2,465,066	85,239	57,829	472	5,325
1761	—	67,324	49,143	*5,731	4,753	1816	—	87,644	56,225	690	4,590
1762	—	68,268	59,994	*9,389	6,022	1817	—	83,821	60,863	242	5,789
1763	1,940,011	68,231	64,180	*11,662	8,342	1818	—	85,714	61,745	305	6,359
1764	—	67,988	53,364	*4,562	7,350	1819	—	84,250	69,881	161	7,210
1765	—	65,872	54,566	*4,697	6,120						
1766	1,981,600	67,061	49,726	*4,092	5,445	1820	2,584,690	84,841	62,930	143	5,877
1767	—	70,744	51,272	*4,189	5,132	1821	—	92,072	66,416	37	5,853
1768	—	67,719	54,751	*10,650	4,054	1822	—	94,309	59,390	11	5,141
1769	2,015,127	66,954	54,991	*10,215	4,499	1823	2,687,457	98,259	56,067	39	4,166
						1824	—	93,577	56,256	618	3,903
1770	—	67,172	53,071	*5,215	4,555	1825	2,771,252	100,315	56,465	1,243	3,962
1771	—	65,988	56,827	*4,362	5,983	1826	2,805,350	97,125	63,027	625	5,294
1772	2,032,516	58,972	76,362	*5,435	12,846	1827	2,828,568	88,138	64,920	600	7,871
1773	—	51,164	105,139	*12,130	20,137	1828	2,848,062	95,354	75,860	257	9,847
1774	—	68,520	44,463	2,065	4,947	1829	2,864,831	99,488	82,719	53	9,264
1775	2,020,847	71,642	49,949	1,275	4,920						
1776	—	66,869	45,692	1,503	5,358	1830	2,888,082	94,626	69,251	104	7,353
1777	—	67,689	51,096	1,943	4,439	1831	2,901,061	88,253	75,274	612	
1778	—	71,901	55,018	6,607	4,337	1832	2,922,845	89,862	68,078	622	
1779	—	76,387	59,325	15,102	3,959	1833	2,959,257	100,309	63,947	1,145	
						1834	2,983,144	100,231	76,294	1,049	
1780	2,118,281	75,122	45,731	3,374	3,394	1835	3,025,439	98,144	55,738	445	
1781	—	71,130	51,333	1,485	4,137	1836	3,061,533	96,857	60,763	138	
1782	—	68,488	58,247	2,482	5,046	1837	3,080,538	94,616	75,611	361	
1783	—	64,969	60,213	3,915	5,464	1838	3,096,794	90,565	74,309	1,805	
1784	—	67,605	63,795	12,453	6,494	1839	3,115,169	91,363	72,988	1,934	
1785	2,149,773	67,497	60,770	5,077	6,785						
1786	—	70,935	55,955	671	6,989	1840	3,138,887	98,160	63,555	650	
1787	—	68,328	51,981	1,771	6,500	1841	3,173,349	95,734	61,279	237	
1788	—	74,019	57,320	5,462	5,858	1842	3,207,141	100,976	67,177	58	
1789	—	70,127	69,583	6,764	14,226	1843	3,237,180	99,154	69,115	9	
						1844	3,275,864	104,693	66,009	6	
1790	2,158,232	66,710	63,589	5,893	11,408	1845	3,316,536	103,660	62,074	6	
1791	—	71,613	55,946	3,101	3,259	1846	3,343,556	99,703	72,683	2	
1792	—	81,063	52,958	1,939	4,226	1847	3,363,330	99,179	79,405	13	
1793	—	77,033	51,376	2,103	4,533	1848	3,399,311	102,524	66,513	71	
1794	—	76,429	53,377	3,964	4,476	1849	3,443,803	112,304	67,842	341	
1795	2,281,137	72,947	63,619	6,740	5,016						
1796	—	79,446	56,474	4,503	3,835	1850	3,482,541	110,399	68,514	1,376	
1797	—	80,374	55,036	1,733	4,141	1851	3,516,889	111,065	72,506	2,488	
1798	—	78,593	53,862	1,357	4,737	1852	3,541,399	108,305	80,090	1,534	
1799	—	75,274	59,192	3,756	4,928	1853	3,562,462	111,407	84,047	279	
						1854	3,606,987	120,107	70,846	204	
1800	2,347,303	67,555	73,928	12,032	5,872	1855	3,639,332	115,072	77,734	41	
1801	—	70,629	61,317	6,057	5,594						
1802	—	74,954	56,035	1,533	5,634						

NOTE (*).—1. From 1749 to 1773 the above-mentioned mortality from small-pox (variola) embraces the mortality from measles (morbilli) also, because the notices about these two diseases have been given under the same title in the formularies; from 1774 only small-pox.

2. To "typhus and typhoid fever" are referred—from 1749 to 1773, the diseases called in the formularies *febris continua, causus, febris putchialis, contagiosa*; from 1774 to 1801, *febris continua, causus, febris septica et putchialis*; from 1802 to 1811, *febris continua et septica, scarlatina, miliaria*; from 1812 to 1820, *febris cujuscumque generis*; from 1821 to 1830, *febris nervosa, septica, remittentes, et intermittentes*. Of all the other diseases specified in the formularies no one can be referred to the denomination "typhoid fever."

3. The average ratio of mortality in Sweden has been calculated as follows:—1751–60, one in 37.0; 1761–1770, one in 37.4; 1771–1780, one in 38.1; 1781–1790, one in 37.2; 1791–1800, one in 40.8; 1801–1810, one in 37.7; 1811–1820, one in 40.1; 1821–1830, one in 44.1; 1831–1840, one in 44.5; 1841–1850, one in 49.6.

The causes of death from disease not longer specified except the Small-pox.

2. NORWAY.

I. THE Committee must answer this question affirmatively on the whole, but feel it their duty to remark, that, during periods of intercurrent epidemic small-pox, some few fatal cases have occurred among persons who have been vaccinated. Our experience dates from 1811, when vaccination was made obligatory in this country by law. The Committee do not, however, venture to affirm that vaccination has always been performed here in the most satisfactory manner possible, as an effective vaccination ought usually to be accompanied by fever. The intensity of the matter and the number of punctures should probably be specially considered.

II. As almost all persons in Norway are vaccinated, and as we are without data for an exact comparison with a previous time, the Committee are not able to answer the question as to typhoid fever and other infective diseases. With respect to scrofula and phthisis, there are certainly some medical men of opinion that these diseases have of late become more prevalent; but, as regards this being attributable to vaccination, we have no experience to warrant an opinion.

III. The Committee do not venture to assert, with positive facts in view, that other diseases are transmitted by vaccination, but they cannot avoid remarking that there are in Norway enlightened medical men who conceive that they have proofs of such transmission having taken place.

IV. Experience has taught us that in the great majority of cases vaccination may be performed without danger in the earliest infancy; but the experience of the Committee, as well as that of several other medical men, has also shown, on many occasions, that infants, after vaccination, do not unfrequently become sickly in various ways. As it hardly ever happens that the first case of epidemic small-pox occurs in a child, the Committee (particularly on account of the difficulty of control), in their proposal for a new law on vaccination have not hesitated to recommend deferring it until school time begins.

II.—EXTRACT from TWELFTH REPORT of the Medical Officer of the Privy Council laid before Parliament in 1870.

ALLEGED INVACCINATIONS OF SYPHILIS.

THE advocates of animal vaccination in this country have very generally taken as their chief ground, that our ordinary system of vaccinating from child to child involves the risk of spreading syphilis in the community: *i.e.* (as I understand the proposition) by means of a compound contagium which the child with inherited syphilis, but perhaps with no outward signs of this taint, may supply from its vaccine vesicles. And I will at once concede that if this risk were real in the sense which is apparently meant,—if, namely, a vaccinator, though using the ordinary lights of professional knowledge, and operating according to the rules of his art for the time being, must nevertheless under our present system be liable to spread syphilis among those whom he vaccinates,—such liability would represent a very strong argument in favour of some change of system. This hypothetical concession, however, must not be taken for more than it means. Very advisedly it does not go beyond the case of *vaccination properly performed*: for this is what the State understands by “vaccination,” when requiring it to be universally adopted, and when offering it gratuitously to all applicants; and the vague possibilities of *mala praxis*, though they require incidental consideration, are almost irrelevant to our main issue.

In any attempt to discuss the subject of alleged invaccinations of syphilis, it is essential to remember that such allegations may easily be made, with or without dishonest intention, in cases where there is not even a pretext for them; and that above all, where such allegations relate to single infections of syphilis, hasty belief in them ought particularly to be avoided. A first reason for caution is this:—“When a child is born with the heritage of syphilis (a very frequent incident, if its parents have been suffering from that infection) the characteristic symptoms commonly do not appear till some weeks after birth, and then the scandal discloses itself. Now, among persons with any sense of shame, the knowledge that one had transmitted syphilis to one's child would always be a sore subject. There would be strong temptations to employ false pretexts. Not only would parents often conjointly wish to disguise from their medical attendant, or from members of their household, the real explanation of the child's ailment; but also, not infrequently, one parent would wish to conceal from the other that the origin of the disease had been a conjugal infidelity. In respect even of unmarried people, every surgeon knows what utterly false, far-fetched, and absurd explanations are given of syphilitic symptoms, primary and secondary; and it requires little
experience

experience to imagine how much more pertinacious will be the demand for excuses, and how much more active the supply of falsehood, under the complicated circumstances of connubial syphilis. Accordingly it is a matter for surprise that vaccination has not almost generally been pitched upon by persons in search of an apology for their syphilitic children." Another reason for caution, even in cases where the good faith of the accuser is unquestionable, consists in the fact (for which I can vouch from personal observation) that a simple surgical cut, in a child having latent in it the taint of hereditary syphilis, may proceed by ulceration to assume the ordinary characters, and require the specific treatment, of a syphilitic sore. For, as such is the fact, presumably the same thing might happen at the vaccination-punctures of a child having latent constitutional syphilis; so that, under the operation of the constitutional taint, they, or one of them, though the vaccination had been performed with perfectly healthy lymph, would become the seat of syphilitic ulceration; a phenomenon, which, if the parents were disguising the previous facts of the case, might mislead or greatly perplex an observer. Moreover, if there are cases where these sources of fallacy do not apply, cases where a person pretending to vaccinate has indubitably inoculated syphilis, we must not, without very critical examination, assume that the act which did the mischief was one which could in any reasonable sense be called vaccination, or that any inference from such a case is applicable to our present argument. For in foreign countries attempts have again and again been made to decide by experiment whether vaccination from persons obviously ill with constitutional syphilis will communicate syphilis to the recipient; and it is, to say the least, a very remarkable fact that in not one of these experiments has anything like syphilis resulted.* On a former occasion (of which I shall presently have again to speak) I quoted many such experiments; how, for instance, M. Taupin, of the Children's Hospital at Paris, in order to settle such questions as these, had, in large numbers of cases, deliberately vaccinated from the arms of children who (while under vaccination) were sick with all other sorts of communicable disease, including syphilis, but had never, on any occasion, seen any of these infections communicated in his vaccinations: "*dans aucun cas, nous y insistons à dessein, le virus n'a rien communiqué que la vaccine toute seule*:" how, again, Dr. Schreier of Ratisbon had similarly on two occasions experimented with vaccine lymph from very syphilitic children, and, like M. Taupin, had got no syphilitic results: how, also, Professor Heim, of the Wirtemberg military service, had done similar experiments with similarly negative results: how, further, Dr. Heymann had seen, as the habitual practice in Java, that children having scrofula, syphilis, itch, the endemic framboesia, and other complaints, were used indifferently with others as sources of vaccine lymph, and that no evidence ever appeared of any of the complaints being so communicated. And to this former negative testimony from several independent experimenters, I may now add the similar testimony of Professor Boeck of Christiania: testimony which has peculiar value because of Dr. Boeck's very eminent relation to contemporary studies of syphilis. In the British Medical Journal of 23rd September 1865 Dr. Boeck reports that, having under his observation two men affected with elephantiasis, two men who never had had syphilis, and whom their elephantiasis of course would not have rendered insusceptible of it, he, on three different occasions far apart, vaccinated these two men from children having well-developed hereditary syphilis; that in one of the six vaccinations, five normal vaccine vesicles resulted, but in the others none, nor any other local change; that "these two patients were observed daily during three years, and never presented a single symptom of syphilis."† With well-attested experiments like the above standing on record, we are obliged to doubt whether vaccination (*i.e.* genuine and simple inoculation with vaccine lymph) from however syphilitic a subject can possibly communicate syphilis; or, at the very least, whether some stage of the vaccine vesicle more advanced than vaccination rules allow to be proper for lymph-supply, or some admixture, which fastidious vaccinators never permit, of blood with the vaccine lymph, must not be a condition for such possibility.

That

* The evidence of these experiments is in so far practically unimportant to us, that subjects such as they describe ought never under any circumstances to be used in contribution to lymph-supply. It is a fundamental rule in vaccination that lymph is to be taken only from subjects who, as far as can be ascertained, are healthy; and, irrespectively of the moot question of physical consequences, a vaccinator must be criminally indifferent to the social acceptance of the great good which he pretends to administer, if ever in any single case, acting in contravention of that rule, he affronts the natural antipathies of those who bring their children to him to be vaccinated. Still, the above-quoted experiments are of extreme speculative interest; and I therefore observe that their very curious testimony, as regards syphilis, is confirmed by the equally curious fact that small-pox, under similar conditions, has again and again been seen not to communicate itself by vaccination. For, not once or twice, but at least hundreds of times, especially in the early days of vaccination, something to the following effect has occurred:—A patient, after exposure to the infection of small-pox, has been vaccinated a little too late for his protection. Warned of his danger, he has had recourse to vaccination when already small-pox was latent in his system. The two contagia, the inoculated vaccine contagium and the previously inhaled contagium of small-pox, have been simultaneously operative in him; the latter producing the general eruption and high febrile disturbance of small-pox, while the former has produced at the vaccinated spots characteristic Jennerian vesicles. And from the lymph of those Jennerian vesicles, again and again, successful vaccinations on other subjects have been performed: vaccinations pure and simple, without any communication of small-pox, though the patients whose Jennerian vesicles had yielded lymph for these vaccinations had at the time their bodies generally pervaded and drenched with the infection of the other disease.

† It may be noted in passing, that if Boeck's experiments had conveyed syphilis, their evidence would not have been conclusive against the lymph which he used. For, in all six vaccinations, he was careful to use not lymph alone, drawn from the arm of the syphilitic child, but an admixture of lymph and blood drawn from that impure source. And therefore, if syphilis had resulted, the question would still have remained, whether lymph, without blood, would have done the mischief.

Appendix, No. 6. That some ignorant quack-salver, pretending to vaccinate, but neither knowing the aspects of a vaccine vesicle, nor caring from what sort of body he draws his supposed lymph, may take, as his "healthy source for lymph-supply," an infant all maculated or ulcered with syphilitic skin-disease, and may from its spots or sores transfer infective material to some victim of his mis-called vaccination, is of course evident; for syphilis does not cease to be syphilis because noodle or knave calls it vaccinia; but facts of this kind cannot in any reasonable sense be counted against vaccination, any more than we should count it a fact against quinine that some grocer had dispensed strychnine in mistake for it. Finally, too, I permit myself this general remark: that, in proportion as any alleged fact contradicts an otherwise universal experience, the individual witness must be regarded as making larger and larger demands on us for belief; and that in matters like the present, where sources of fallacy are so abundant, the witness's accuracy of observation requires to be most thoroughly guaranteed.

From this preliminary statement of the very real difficulties of the discussion, I proceed to the alleged case against vaccination.

During the last 60 years the medical literature of Europe has gradually accumulated records of various occasions (I believe, in all, more than twenty) on which it has been definitely imputed to a vaccinator that he had made syphilitic inoculations. From various causes it is impossible to obtain absolutely complete and trustworthy evidence even on the most recent of these cases; and in a large proportion of the number (particularly in those which were of earliest date, and in those which have related only to single vaccinations) there may have been mis-statements or fallacies which cannot now be exposed. Of the 14 accusations which seem to me most credible, nine were in Italian practice, two in German, and three in French; or if four of the 14 be omitted, as relating only to one or at the utmost to two vaccinations, the remaining 10 were in seven instances Italian, in two German, and in one French.* As regards most, if not all, of these 10 instances, I think it certain that the so-called vaccinator really did, somehow or other, produce the result which was imputed to him. What may have been the intimate mechanism of these occurrences as regards the introduction of the extraneous poison, I cannot feel perfectly sure. It is not to be expected that the man who has introduced syphilis while purporting to vaccinate always will, or even always can, inform us how his effect was produced.† As regards the French case (concerning which I happened at the time to be able personally to get some particulars, but have in vain endeavoured to obtain official records) I was satisfied by such informal statements as were made to me, not only that the mischief had not arisen in any decently-conducted vaccination, but that the circumstances under which it arose were circumstances of the most atrocious misconduct. That misconduct was also at the root of the two German cases may be sufficiently gathered from the fact that in each case legal proceedings were taken against the vaccinator, and resulted in his being sentenced to imprisonment. The remaining seven cases (including the most important cases in the whole list) are all Italian; which fact in itself is noteworthy, as the Italian rules of vaccination-practice appear to be in some respects less strict than our own; and, beyond this, I find that in some of the cases, fault, which even the Italian rules would no doubt call malpractice, is confessed. It was with reference to facts like these that at starting I thought it so necessary to distinguish between *vaccination properly performed* and the *mala praxis* of an individual vaccinator. That, under such circumstances as there were in the French case and manifestly in some of the others, circumstances which would more than justify the institution of criminal proceedings against the offender, syphilis has been, and may again be, inoculated by a person pretending to vaccinate, I do not in any degree doubt. Under such circumstances that which purports to be vaccination may be vaccination in nothing but name. But, may the like mischief occur under any different circumstances? Can an educated medical practitioner fall into it by mere mischance, or must he, in order to avoid it, exercise more than average vigilance and skill?

These questions, difficult perhaps at present to answer by any sort of deduction from general pathological principles, and surely not empirically answered by the few published cases in which the vaccinator who has inoculated syphilis declares himself to have been blameless in the matter, receive, fortunately, a sort of practical answer, and, as regards the probabilities of the case, seem quite overwhelmingly negatived when common experience is appealed to. If our ordinary current vaccination propagates syphilis, where is the syphilis

* Three of the most important cases have been within the last 12 years. One, unfortunately on a large scale, was in 1862, at Rivalta near Aequi, in Piedmont; in connexion with which, report was made of a similar mischief having occurred six years previously at Lupara in the province of Naples; and another such occurrence was at Paris in 1865.

† His mere declaration of blamelessness in the matter must generally, from the nature of the case, be in itself almost valueless. Perhaps the chief point respecting which he is on his trial is, whether, in an infant from whom he took lymph some three or four months ago, he *overlooked* signs, which he ought to have seen, of syphilis: and his assertion that he saw no such signs is in itself worth nothing, unless it be sure that his eyes were properly open, and his wits properly educated, to see and understand whatever of the kind may have been there. Or the point raised about the vaccinator, may be whether, some three or four months ago, he *unawares* did some thoughtless or slovenly act which mixed syphilitic and vaccine contagia on his lancet, or substituted the former contagium for the latter; but here again, for obvious reasons, his mere denial might count for little. And while thus from the nature of the question the vaccinator's personal testimony in his own favour must (whether it be true or false) almost necessarily be inconclusive, conclusive collateral testimony, in cases of any real doubt, can of course hardly ever be attainable.

syphilis that it propagates? Who sees it? The experience of this department is an entire blank on the subject. For the last 10 years we have been in incessant intimate communication with the different parts of England on details of public vaccination, and, during these years, every one of the about 3,500 vaccination districts into which England is divided has been visited three or four times by an inspector specially charged with the duty of minutely investigating the local practice of vaccination; yet from this systematic and extremely detailed search for all that has to be said on the subject of vaccination in England, no inspector has ever reported any local accusation or suspicion that a vaccinator had communicated syphilis. Again, our National Vaccine Establishment has been in existence for more than 60 years, vaccinating at its own stations every year several thousands of applicants, and transmitting to other stations supplies of lymph, with which every year very many (at present some 50 or 60) other thousands are vaccinated, who in their turn become sources of vaccination to others; but this vast experience does not, so far as I can ascertain, include knowledge of even one solitary case in which it has even been alleged that the lymph has communicated syphilis. Is it conceivable that these negative experiences could be adduced, if the vaccine lymph of children with latent hereditary syphilis were an appreciable danger to the public health?

But our special departmental experience, immensely large though it is, constitutes only a fraction of the overwhelming evidence which may be adduced to the same general effect. Thirteen years ago it devolved upon me (as medical officer of the then General Board of Health) to make the widest possible inquiries, both of scores of public departments and institutions, and also of many hundreds of individual practitioners, in our own country and on the continent of Europe, with a view to elicit all existing experience on the validity of objections which had been alleged against vaccination; and on that occasion I, of course, gave great prominence to the point which is here raised. One of the four questions which I circulated was the following: *Have you any reason to believe that lymph, from a true Jennerian vesicle, has ever been a vehicle of syphilitic, scrofulous, or other constitutional infection to the vaccinated person; or that unintentional inoculation with some other disease, instead of the proposed vaccination, has occurred in the hands of a duly-educated medical practitioner?* The answers which I received on this, as on each of my other points, from 542 members of my profession, are all printed in alphabetical succession in the Appendix of the Report which I made in 1857 on the results of my inquiry.* The answers, as regards syphilitic inoculation, are only just short of being an absolutely uniform "No;" partly because some expression was given to merely speculative opinion, and partly because, in a very few individual instances, a practitioner believed he had known a case or cases of unintended infection. Whether in these most isolated instances the observer had been duly on his guard against the very probable sources of fallacy to which I have above referred, and whether, so far as he had been so, the imputed syphilitic inoculation was a fact of surgical *mala praxis*, are points which I need not here discuss; for the alleged cases were thrown into real insignificance by their relation to the main body of testimony. Men of the largest and oldest consulting practice in the United Kingdom, men who were believed to have seen every variety of disease and accident to which the human body is liable, our leaders who had for years taught medicine and surgery to the mass of the profession, and physicians and surgeons of our largest metropolitan and provincial hospitals in England, and Scotland and Ireland, physicians who had specially studied the diseases of infancy, surgeons who had specially studied the inoculative diseases, pathologists of distinguished insight and learning, men of all these sorts, scores on scores of them, had never in their experience "had reason to believe or suspect" any such occurrence as my question described. In the alphabetical series to which I have referred, there may be read all the most eminent British names of 13 years ago, certifying to such negative experiences; there may be read, too, that equally negative in Paris had been the vast experience of Chomel, and Moreau, and Rayer, and Ricord, and Rostan, and Velpeau; equally negative at Vienna, that of Hebra, and Oppolzer, and Sigmund. And, in here recurring to that very remarkable mass of testimony, I may repeat the remark which my former review of it suggested to me: "Obviously one, at least, of two conclusions is inevitable; either it is the case that, even with reprehensible carelessness as to the source of lymph, vaccination (so long as in any sense of the word it is vaccination) cannot be the means of communicating any second infection; or else it is the case that in the world of vaccinators care is almost universally taken to exclude that possibility of danger. To the public, perhaps, it matters little which of these conclusions is true."

Though it would be the merest idleness to take again now the sort of formal census of medical opinion which I took 13 years ago, I may state that ever since that time I have felt it among my strictest duties to be generally watchful and interrogative on the present subject; all the more so as the period has been one of extraordinary pathological progress, and especially has brought to light very important new knowledge concerning syphilis; and I have every reason to believe that a present census of personal experience in this country would give just the same practical results as those which accrued from the former inquiry. Indeed in a few very important directions I have satisfied myself that it does so. I may mention, for instance, that the Army Medical Department has, during the last 11 years, had cognisance of 151,316 (adult) vaccinations and re-vaccinations performed on the soldiers
and

* Papers relating to the History and Practice of Vaccination; presented to both Houses of Parliament by Command of Her Majesty; 1857, 4to. p. 280.

Appendix, No. 6. and recruits of Her Majesty's service; where, from the nature of the case, the subjects of the proceeding are persons who afterwards permanently remain under medical observation, and in whom therefore no syphilitic consequence of vaccination could possibly escape notice; where, moreover, the chances of latent constitutional syphilis in subjects furnishing the lymph must be about the same as among our civil population; but that in all this vast and critical experience, so far as is known to Dr. Balfour, the eminent and laborious annual reporter on the diseases of the British army, no single case has ever been alleged of a soldier syphilised by vaccination. Another fact, too, which I take particular pleasure in mentioning is this: among the extremely few answers in 1857, where respondents had seen syphilitic effects which they believed to have arisen from vaccination, one had particular importance in my eyes, as coming from a surgeon of specially large opportunities, and (as I personally knew) of very special accuracy and skill of observation, Mr. Jonathan Hutchinson, whose answer was, "I believe that I have seen four or five instances in which local syphilitic affections [and in one or two of them with constitutional consequences] were induced by vaccination performed under ordinary circumstances, and by duly qualified men." I have at the present opportunity referred again to Mr. Hutchinson on the subject, anxious to get the result of his greatly increased experience, and knowing quite well that, after his attention had once been drawn to the point, cases bearing on it would not be likely to escape his notice. He now answers as follows: "In the 13 years and upwards which have passed since I made the communication which is given at page 73 of the 'Papers relating to the History and Practice of Vaccination' I have not met with a single case, either at the Hospital for Diseases of the Skin, or elsewhere, in which I have had any reason to believe or suspect that syphilitic disease had been communicated by vaccination. The origin of the diseases which have come under my observation among the children at the Hospital for Skin Diseases, has, of late years especially, been with me an object of particular investigation. I doubt also whether, had I investigated the cases to which I have referred in the 'Papers, &c.' with my present knowledge and experience, I should have formed altogether the opinions respecting their nature or origin therein expressed."

Indisputable certainties, which anyone can verify for himself, are: first, that year by year millions of vaccinations are performed in Europe with scarcely a solitary accusation transpiring that syphilis has been communicated by any of them; and, secondly, that physicians and surgeons who could not fail to see such cases in abundance, if such abundance were a reality, concur with almost absolute uniformity, hundreds of them together, in declaring they have never, in all their experience, seen even a single case of the kind. Surely for every practical purpose certainties like these are our best guides; and with such certainties in our knowledge it would be the merest pedantry to insist on infinitesimal speculative uncertainties, as though our English system of vaccination deserved mistrust because we are puzzled to explain some alleged syphilisations on the Continent. And if 13 years ago I was able to show that vaccination, as till then administered in England, had not deserved public mistrust in the matter here under consideration, what much stronger claims on public confidence, in that as in all other respects, may be advanced for our present system!

Recent improvements of English system of vaccination.

The system of 1843-57 (as described in my above-quoted special Report, and retrospectively again in the Second Annual Report of this Department) was so extremely defective, and so unguarded by any kind of supervision, that, though happily syphilis was not among its fruits, other kinds of mischief, and at least very much inefficiency, might, with comparative justice, have been attributed to it. "The law had provided a specific machinery for public vaccination; it had in effect made the use of this machinery compulsory for at least two-thirds of the population, as well as optional for the remainder; yet hitherto no security had been taken that the vaccination so universally offered, and so extensively enforced, should be useful or even harmless to its recipient. Reproaches were not unreasonably addressed to the Legislature and the Government, that a poor man was compelled, under threats of penalty or imprisonment, to take his child to be vaccinated, and virtually by some particular vaccinator, but that the vaccination which he was thus obliged to accept might, for aught the law had provided, be good, bad, or indifferent. Two other considerations gave increased weight to this argument. On the one hand, it was notorious that great laxity prevailed among parochial vaccinators as to their privilege of acting by deputy; and that often a vaccinator, instead of adhering in this respect to the terms of his contract, to act 'either by himself or by some fully qualified medical practitioner as his substitute,' would permit his duty to be performed by assistants or pupils possessing no legal qualification to practise. On the other hand, it was certain that, in the existing state of the law, a person might be appointed parochial vaccinator who had no sufficient knowledge of vaccination, in fact even a person who had never seen a vaccination performed nor ever observed a vaccine vesicle during its course; for it was a natural consequence of the arrangements of public vaccination in this country that, generally speaking, our ordinary schools of medicine could have no means of practically teaching vaccination, nor hitherto had any of the public vaccinating stations been opened as schools for the purpose; and accordingly a medical student might complete his studies, and obtain his diploma or license for practice, without having had any convenient opportunity of learning to vaccinate. His possession of such opportunities would commonly have been contingent on his residing during his pupilage in the house of some surgeon-apothecary; and in this case the value of his opportunities might, according to circumstances, have been great or little. For the absence of such practical opportunities nothing else could compensate; not because vaccination, as regards the mere manipulation with the lancet, requires much special study; but because to know well the results of vaccination, especially to know well and practically the

the characters of a vesicle from which it is right to take lymph, requires that cases of vaccination, skilfully performed, should have been attentively observed during their course."

Such were the circumstances of the case when my Lords, by "The Public Health Act, 1858," were first called upon to superintend the public vaccination of this country; and the successive steps which my Lords have taken in fulfilment of this responsibility, and which may be traced in ample detail in the Annual Reports of the Department, have, I venture to say, gone far towards giving this country such properly-administered vaccination as England, before all countries of the world, surely ought to have. I confine myself here to mentioning those of their Lordships' Acts which have aimed at providing every possible security against any such sorts of malpractice as I have adverted to in the present Report.

The Act of 1858 authorised their Lordships to frame regulations "for securing the due qualifications of persons to be hereafter contracted with by guardians and overseers of unions and parishes in England for the vaccination of persons resident in such unions and parishes, and for securing the efficient performance of vaccination by the persons already or hereinafter to be contracted with as aforesaid;" and to "cause to be made such inquiries as they see fit in relation to . . . the observance of the regulations and directions issued by them under this Act."

Evidently a first rule to be made by their Lordships under the above authorisation, was that in future no one should be admissible as a contractor, nor be allowed to act as deputy to a contractor, without producing evidence that he had sufficiently studied vaccination; but no such rule could be of effect till a preliminary difficulty had been overcome (the difficulty, namely, of procuring satisfactory evidence that the candidate for a vaccination contract or deputyship really had learnt the business which he wished to undertake). The ordinary apparatus of medical diplomas or licenses was here inapplicable; for the various licensing corporations in England had neither the habits nor the means of practically inquiring whether their respective candidates had gained a proper knowledge of vaccination; and hitherto, as already stated, there existed no schools where vaccination could be duly learnt, and whence certificates of proficiency could be received. Accordingly, if the intentions of the Legislature were to be fulfilled, it was preliminarily needful that special establishments should be organised where vaccination could be studied under skilled guidance, and whence candidates, after due instruction or examination, could obtain such certificates of proficiency as would show them qualified to be contracted with (provided they had the necessary professional licenses) for the performance of public vaccination. Proceedings which my Lords took in 1859, and which are particularised in my report for that year, made all required provisions in these matters. Certain carefully selected public vaccinators, officiating in places where there are recognised medical schools, were authorised to act for their Lordships' purpose as teachers of vaccination, at whose "educational vaccinating stations" any medical student might thoroughly learn vaccination, and acquire a certificate of having done so; and, this preliminary arrangement being concluded, my Lords issued their rule that no future entrant on the medical profession should be eligible as a contractor for vaccination, or be allowed to act as deputy for a contractor, unless he, in addition to his general qualifications, "produce a *special certificate*, given under such conditions as the Privy Council from time to time fix, by some public vaccinator whom the Privy Council authorise to act for the purpose, and by whom he has been duly instructed or examined in the practice of vaccination, and all that relates thereto."*

Secondly, as the above rule could only relate to future contractors for vaccination, and even to them only in so far as they were not already members of the medical profession, my Lords issued certain technical instructions which all public vaccinators were required to follow, and which would supply a public standard of what in their Lordships' opinion was "properly performed vaccination." Some of these instructions bear so specially on my present subject matter that I beg leave to draw particular attention to them: "1. Except
there

* The following extracts from a departmental memorandum of 1859 will show the kind of instruction which was to be given at these stations, and the extent of proficiency which was to be required of candidates for the certificate. "The vaccinator of an educational vaccinating station, during his attendance thereat, will exhibit and explain the course and characters of the vaccine vesicle, will practically teach the best method or methods of performing vaccination, and of taking lymph for present or future use, will inculcate all precautions which are necessary with regard to the health of subjects proposed for vaccination, and with regard to the selection and preservation of lymph, and will give all such other instruction as is requisite for the scientific and successful performance of vaccination and re-vaccination. . . . The certificate of proficiency will be understood to imply, and therefore the teacher who signs it will have taken care to ascertain, that the person to whom it is given can skilfully vaccinate, both with liquid lymph (including such as is preserved in capillary tubes) and also from ivory points; that he can properly charge ivory points or capillary tubes with lymph; that he is aware of the relative advantages of recent and preserved lymph, and of all precautions which are requisite in using the latter; that, from among vaccinated subjects presented for eighth-day inspection, he can select, and give reasons for preferring, those who are fittest to furnish lymph; that, besides being thoroughly familiar with all local changes which, from first to last, normally ensue on vaccination, he has learnt what causes may accelerate or retard the local changes, or give them undue severity, or otherwise render them irregular; that he is well-informed as to the constitutional effects of vaccination (including the eruptions which sometimes follow it) and as to the treatment which cases of vaccination, under various circumstances, may require; that he knows how far the protective influence of vaccination is affected by lapse of time, and how far by the mode in which vaccination is performed, especially by the number or size of vesicles, and knows generally under what circumstances re-vaccination is to be recommended; finally, that he is acquainted with the laws and regulations relative to public vaccination, and understands the local arrangements which are necessary for maintaining a constant supply of lymph."

Appendix, No. 6.

there be immediate danger of small-pox, vaccinate only subjects who are in good health. Satisfy yourself that there is not any eruption behind the ears, or elsewhere on the skin; nor any febrile state; nor any irritation of the bowels. Under no circumstances vaccinate a subject to whom, from the state or prospects of his health, vaccination is likely to prove injurious . . . 6. Consider yourself strictly responsible for the quality of whatever lymph you use or furnish for vaccination. Take lymph only from subjects who are in good health, especially satisfying yourself that they are free from eruption on the skin. Take it only from well characterised, uninjured vesicles. Do not take it from cases of re-vaccination. Take it (as may be done in all regular cases on the day week after vaccination) at a time when the vesicles are plump, either just before the formation of the areola, or, at the latest, not more than 24 hours after the areola has begun to form . . . 7. In vaccinating from arm to arm, and still more in proceeding to store lymph, avoid draining any vesicle which you puncture . . . 8. Scrupulously observe in your inspections every sign which tests the efficiency or purity of your lymph. Note any case wherein the vaccine vesicle is unduly hastened or otherwise irregular in its development, or wherein any undue local irritation arises; and if similar results ensue in other cases vaccinated with the same lymph, desist at once from employing it . . . 9. If from any cause your supply of lymph ceases, or becomes unsuitable for further use, take immediate measures for obtaining a new supply. 10. Keep in good condition the lancets or other instruments which you use for vaccinating, and do not use them for other surgical operations. Supplies of lymph, guaranteed by the National Vaccine Board, are furnished on application to all medical practitioners." In the present connection too it deserves notice, that, among their Lordships' regulations which have been in force for the last 10 years, is one requiring the public vaccinator in every case where he vaccinates, to particularise in a special column of his register the lymph-source from which the vaccination is done: so that if afterwards in any case an accusation against the lymph should arise, the question of the fitness or unfitness of source can at once be properly investigated.*

Thirdly, my Lords in 1860 began on a small scale, and by 1862 had brought into full work, arrangements for systematically inspecting the local machinery in force throughout the country for purposes of public vaccination, and the actual results obtained by the machinery in each district. Five of my annual volumes (from the third to the seventh inclusive) contain details, which of course it has not been necessary to continue in subsequent volumes, of the minute local examinations which were made during those years, of the faults which were found, and of the reforms which were recommended: and, to illustrate in only one particular the minuteness of these inquiries, I may note that the reports for only 1863-4 contain records of (among other things) the personal examination of some 260,000 children, and of the evidence given by their respective vaccination-marks as to the quality of the vaccination which each vaccinated child had undergone.

No one can doubt but that the work of these years, during which every public vaccinator of England found his work subjected to skilled criticism, and was assisted to understand the causes of whatever shortcomings were found in it, must have been of substantial influence on the trustworthiness of English vaccination. It represented the beginning of a new era; and consequently in 1865, when a second series of inspections began, evidence of very extensive, and often of very great, improvement in the quality of our public vaccination was manifest. But hitherto the vaccination law of England had very serious defects, which in some cases actually impeded, and in other cases left without necessary assistance, the endeavours which my Lords were making to perfect the system. In 1867 those defects were removed by the new Vaccination Act of that year; and from 1867 there consequently date further very considerable measures of improvement. Every vaccination district in England is now visited once in every two years, the quality of its vaccination minutely examined by the inspector whom their Lordships send, and all necessary advice and assistance given to local officers and authorities as to whatever may improve the vaccination. Nor is this all. For, during the last four years an entirely new influence has been at work in the system of pecuniary awards to meritorious public vaccinators, which (as described in my ninth report) the liberality of Parliament has empowered my Lords to administer, and some details of which for the year 1869 are mentioned at a previous page of my present volume.

Further I have to say that, while since 1858 all the above influences have been powerfully tending to improve the public vaccination of England, so far as dependent on the individual efficiency and zeal of the about 3,500 medical practitioners by whom it is locally administered, exertions equally great have been made by their Lordships to improve other most important relations of the service. Foremost among such work as I here refer to, and of special importance with regard to the quality of public vaccination, are the measures which my Lords have taken to improve the local organisations which concern the maintenance of local lymph supplies. The following extract from a departmental memorandum

of

* A capital illustration of the advantages of this system was given last year in the Bow-street Police Court, as may be read in the "Times" of 11th and 16th September 1869. A mother had appeared in the Court, bitterly complaining that loathsome disease had been given to her infant by a public vaccinator's use of impure lymph. The charge was immediately investigated from this department, and, as result, proof was publicly given that the accusation was entirely unjust; but parts of this proof could not possibly have been had, except for the clues which, as above described, were existing in the vaccinator's register.

of 1858 will explain the nature of an immensely important reform which had thenceforth to be gradually realised:—"There is reason to believe that the performance of public vaccination in England is disadvantageously affected by its present extreme subdivision. For the satisfactory working of a public vaccinating station, it is requisite that systematically on each vaccinating day two groups of cases should assemble there; on the one hand infants, who having been vaccinated on the day week preceding, are now (as the law requires) brought back for inspection, and are ready to furnish the vaccinator with lymph for his present proceedings; on the other hand, infants brought for vaccination, who, if now vaccinated, will on the day week following be brought back for inspection, and then in their turn contribute lymph for the benefit of further applicants. By the coming together of these two groups of cases the vaccinator is enabled to vaccinate from arm to arm; a mode of proceeding which (as a rule) is of great importance to his success. It is also requisite that each group of cases should not be too restricted in number. The careful vaccinator does not indifferently vaccinate from the arms of all infants brought back on the eighth day, but exercises selection among them; and facility for this selection cannot be afforded him unless there be on each vaccinating day an average return of several vaccinated cases. If his share of the local vaccination be either too small or too much subdivided among different stations and different days, the cases returning to him for eighth-day inspection will on many vaccinating days be too few for his purpose. On all such occasions he must either omit to vaccinate those who apply to him, or (unless he have recourse to less eligible sources) must vaccinate them with preserved lymph, and incur the much greater chances of failure which belong to the usual modes of thus vaccinating. Ill-frequented vaccinating station (stations, that is to say, where the total number of vaccinations, as compared with the number of vaccinating days, is too small for the local lymph-supply to be continuously and properly maintained) are now a very prominent feature in our system of public vaccination. And this state of things is one of serious consequence, not only as implying that at present a large proportion of the vaccinations in England are performed under disadvantageous circumstances; but also because, if it continues, the general lymph supply of England can scarcely fail to become insufficient or deteriorated. The excessive subdivision which leads to this result arises in various ways. Sometimes, no doubt, if vaccination to be performed within one jurisdiction has been divided among too many performers. But still oftener it is the case that individual vaccinators have distributed their respective shares of the public duty among too many stations, or too many vaccinating days; and in some cases the vaccinator develops the inconvenience to its greatest extent by almost or entirely disusing the appointed station, and habitually performing his vaccinations under contract at the several private dwellings of his patients; a mode of proceeding which, in thinly populated rural districts, may be convenient and even necessary, but which in town districts can never be necessary, and scarcely ever can fail to be disadvantageous." My earlier annual reports contained lamentable proofs of the very wide extent in which the evil here described needed removal, and of the very imperfect powers which my Lords were yet able to wield against it: but, in 1867, the new Vaccination Act began, in this as in all other respects, an era of greatly accelerated progress. Early in 1868 my Lords issued in relation to this matter definite and imperative regulations, where previously they could at the utmost only suggest; and during the time which has since elapsed, these regulations, with a complete re-inspection of the country, have gone far to establish throughout England the better local arrangements which were required. And I may add that while by these improvements a greatly improved security has been taken for the excellence of local lymph-supplies, my Lords have also taken corresponding measures (which even at the present time are being further developed) to perfect the basis of lymph-supply for their own central distributory establishment.

Considering all the above improvements, made within the last dozen years, in the arrangements of public vaccination of England, and considering especially their bearing on the quality of the vaccination, both as regards the probable efficiency and care of the vaccinator, and as regards the local arrangements which affect his selection of lymph, I venture strongly to insist on the comparison which it has been my object to draw. And if in 1857 I was able to show that vaccination, as till then administered in England, had not deserved any such imputation as that which I have here been again discussing, surely I may anticipate that, in the present immensely improved state of the case, no such imputation will be deemed warrantable.

Appendix, No. 7.

PAPER handed in by Mr. *Simon*, F.R.S.

Appendix, No. 7.

COMPARATIVE VIEW of the MORTALITY from SMALL-POX in Protected and Unprotected Populations in *India* (Bengal Presidency), during recent severe Epidemic, from Dr. *Harvey's* Sketch of the late Epidemic of Small-Pox in *Bhurtpoor*.

POPULATIONS COMPARED.	Population or Strength.	Deaths from Small-Pox.	Rates per 10,000 of Deaths to Population.
AGRA (virtually unprotected) - -	142,661	1,836	128·69
DELHI (less unprotected) - -	154,417	1,612	104·39
BHURTPOOR (partially protected) -	61,448	401	65·25
BRITISH ARMY (protected) - -	33,350	12	3·59

Harvey's Sketch, p. 28.

Appendix, No. 8.

RETURNS FROM THE REGISTRAR GENERAL.

(A.)

MEAN ANNUAL DEATH RATES, General and by Particular Causes, in *England and Wales*, per *Million*, living in successive Periods, from 1838 to 1869 inclusive.

Causes of Death.	Five Years.	Three Years.	Five Years.	Five Years.	Five Years.	Five Years.
	1838-42.	1847-9.	1850-4.	1855-9.	1860-4.	1865-9.
1. All causes - - - - -	22,069	24,204	22,317	22,085	22,263	22,754
SMALL-POX - - - - -	571	303	274	198	190	145
All causes, except small-pox - - -	21,497	23,901	22,042	21,887	22,072	22,609
2. Measles, scarlatina, diphtheria, quinsey, croup, whooping-cough, fever, erysipelas	3,280	3,575	3,110	3,317	3,396	3,217
3. Diarrhoea, dysentery, cholera - - -	300	2,024	1,284	951	787	1,252
4. Respiratory organs, including phthisis and influenza.	5,735	5,957	5,598	5,828	5,955	5,916
5. Nervous diseases, including teething -	2,989	2,964	2,984	2,929	2,993	3,030
6. Circulatory diseases, including dropsy -	1,223	1,230	1,234	1,241	1,324	1,394
7. Digestive diseases, excluding the above-mentioned diarrhoeal and teething.	953	1,090	1,026	993	993	995
8. Tubercular and childrens' developmental diseases, but omitting (as above included) phthisis and teething.	908	1,217	1,255	1,222	1,241	1,268
9. Diseases of urinary, generative, locomotive, and tegumentary systems.	225	327	356	399	467	520
10. Violence - - - - -	728	734	737	733	761	790
11. Other causes - - - - -	5,157	4,776	4,459	4,273	4,156	4,227
Deaths, by all causes, of Children under five years of age per <i>Million</i> living under five - - - - -	65,772	69,353	68,316	68,987	67,823	69,212

General Register Office, Somerset House, }
8 May 1871.

George Graham,
Registrar General.

(B.)

MEAN ANNUAL DEATH RATES, General and by Particular Causes, in *London*, per *Million*, living in successive Periods, from 1838 to 1869 inclusive.

Causes of Death.	Three Years. 1838-40.	Four Years. 1841-4.	Five Years. 1845-9.	Five Years. 1850-4.	Five Years. 1855-9.	Five Years. 1860-4.	Five Years. 1865-9.
1. All causes - - - - -	25,719	23,580	25,854	24,201	23,077	24,074	24,449
SMALL POX - - - - -	1,013	454	387	300	237	281	276
All causes, except small-pox - - -	24,706	23,127	25,466	23,901	22,840	23,793	24,173
2. Measles, scarlitina, diphtheria, quinsey, croup, whooping-cough, fever, erysipelas.	4,183	3,458	3,955	3,473	3,713	4,286	3,704
3. Diarrhœa, dysentery, cholera - - -	282	451	2,433	2,105	1,098	854	1,574
4. Respiratory diseases, including phthisis and influenza.	7,238	7,052	7,096	6,812	6,914	7,139	7,203
5. Nervous diseases, including teething -	3,676	3,354	3,018	2,827	2,667	2,780	3,002
6. Circulatory diseases, including dropsy -	1,572	1,515	1,272	1,269	1,221	1,355	1,330
7. Digestive diseases (excluding the above-mentioned diarrhoeal and teething.	1,101	1,120	1,235	1,048	981	983	954
8. Tubercular and childrens' developmental diseases, but omitting, as above included, phthisis and teething.	1,235	1,334	1,576	1,544	1,455	1,497	1,442
9. Diseases of urinary, generative, locomotive, and tegumentary systems.	290	315	476	454	506	578	652
10. Violence - - - - -	675	595	692	734	739	829	828
11. Other causes - - - - -	4,453	3,932	3,714	3,635	3,546	3,490	3,484
Deaths, by all causes, of Children under five years of age per <i>Million</i> living under five - - -	88,343	81,893	85,623	78,738	78,949	80,713	82,742

General Register Office, Somerset House, }
8 May 1871.

George Graham,
Registrar General.

Appendix, No. 9.

Appendix, No. 9.

PAPERS handed in by Mr. *Alexander Wood*, M.D., and referred to in his Evidence,
2 May 1871.

EXTRACTS from the REGISTRAR GENERAL'S SUPPLEMENTARY REPORT for 1869.

(Referred to in Question 4400.)

TABLE XXIV.—VACCINATION in SCOTLAND, 1864–1869, and Proportion to the Births each Year.

Years.	—	Success- fully Vaccinated.	Vaccination Post- poned.	Insusceptible of Vaccination.			Died before Vaccination.	Removed from District before Vaccination, or otherwise not accounted for.	Total Births.
				From Constitu- tional Insuscepti- bility.	From having had Small-pox.	From previous Vacci- nation.			
1864	- Number -	95,047	662	667	154	440	9,180	2,701	108,851
1865	- Number -	99,648	719	474	34	207	9,366	2,622	113,070
1866	- Number -	100,408	579	332	30	227	9,433	2,658	113,667
1867	- Number -	101,139	670	233	16	151	9,355	2,480	114,044
1868	- Number -	102,140	914	277	7	230	9,440	2,506	115,514
1869	- Number -	99,265	963	177	17	174	10,069	2,773	113,441
1864	- Per-centage	87·313	0·608	0·613	0·142	0·404	8·438	2·481	100·000
1865	- Per-centage	88·130	0·636	0·419	0·030	0·183	8·283	2·319	100·000
1866	- Per-centage	88·335	0·510	0·292	0·026	0·200	8·299	2·338	100·000
1867	- Per-centage	88·684	0·587	0·204	0·014	0·132	8·203	2·176	100·000
1868	- Per-centage	88·423	0·791	0·240	0·005	0·199	8·172	2·170	100·000
1869	- Per-centage	87·504	0·852	0·156	0·015	0·153	8·176	2·444	100·000

TABLE XXV.—VACCINATIONS in SCOTLAND, 1864–1869, deducting from the Births those who Died before they could be Vaccinated, and giving the Proportion of the Vaccinated to the surviving Births of each Year.

Years.	—	Successfully Vaccinated.	Vaccination Postponed.	Insusceptible of Vaccination.			Removed from District before Vaccination, or otherwise not accounted for.	Total Living.
				From Constitu- tional Insuscepti- bility.	From having had Small-pox.	From previous Vaccination.		
1864	- Number -	95,047	662	667	154	440	2,701	99,671
1865	- Number -	99,648	719	474	34	207	2,622	103,704
1866	- Number -	100,408	579	332	30	227	2,658	104,234
1867	- Number -	101,139	670	233	16	151	2,480	104,689
1868	- Number -	102,140	914	277	7	230	2,506	106,074
1869	- Number -	99,265	966	177	17	174	2,773	103,372
1864	- Per-centage	95·361	0·664	0·969	0·155	0·441	2·710	100·000
1865	- Per-centage	96·089	0·694	0·457	0·033	0·199	2·528	100·000
1866	- Per-centage	96·329	0·556	0·318	0·029	0·217	2·551	100·000
1867	- Per-centage	96·609	0·640	0·222	0·015	0·144	2·370	100·000
1868	- Per-centage	96·292	0·861	0·261	0·007	0·216	2·363	100·000
1869	- Per-centage	96·027	0·935	0·171	0·016	0·168	2·683	100·000

(Referred to in Question 4450.)

VACCINATION IN SCOTLAND, 1869.

THIS is the Sixth Report relative to the vaccination of children in Scotland, and it shows what proportion of the children, whose births were entered on the registers of 1869, were vaccinated according to the provisions of the Scottish Vaccination Act 26 & 27 Vict. c. 108. By the provisions of that Act, a large proportion of the children born in 1869 must be vaccinated during 1870; so that the Report having reference to the vaccination, must always be one year behind that having reference to the births, deaths, and marriages, along with which it must be published.

From the vaccination returns just received, it appears that of the 113,441 children whose births were entered on the Scottish registers during the year 1869, 96,265 being 87·504 per cent., were successfully vaccinated; 966, or 0·852 per cent., had their vaccination postponed from bad health, teething, or other causes; 365, or 0·324 per cent., were found to be insusceptible of the vaccine virus—177 from constitutional insusceptibility, 17 from having previously had small-pox, and 174 from having been previously vaccinated. 10,060 children, being 8·876 per cent., died before they could be vaccinated, and 2,773, or 2,444 per cent., had removed from the district before the period allowed by the Act for their vaccination had expired, and so were lost sight of by the registrars, or were otherwise unaccounted for. (Table XXIV.)

The fact, however, at which we wish to arrive is what proportion of the children who survived till they could be vaccinated, were protected from small-pox by the vaccine virus. Table XXV. is drawn up with the view of showing that fact, not only for the year 1869 but for every year since the Act came into operation.

By that Table we learn that, of the children who survived until they could be vaccinated, 96·027 per cent. were successfully vaccinated; 0·935 per cent. had their vaccination postponed; 0·355 were found to be insusceptible of vaccination, from constitutional insusceptibility, from having personally had small-pox, or from having been previously vaccinated; while 2,683 per cent. were lost sight of by the registrars, from having removed from the district previous to being vaccinated, or being otherwise not accounted for. It would tend greatly to reduce the proportion of this latter class were the time shortened which the Act at present allows to elapse between the birth of the child and the enforcement of the vaccination under a penalty. At present the Act allows six months, which brings the child to the teething period, when vaccination does not easily succeed, and requires often to be postponed. The migratory habits of the parents of those who escape vaccination altogether, make them most dangerous to the community, because they are the very class who are most liable to carry small-pox from town to town. But if the period were shortened to three or even to four months, a very large proportion of this class who now escape vaccination would come under the operation of the Act, be laid hold of by the registrars, and be forced to have their children vaccinated.

Seven years have now passed since the Vaccination Act became law in Scotland. It may, therefore, be expected that by this time it will have shown whether it has accomplished the object intended by the Legislature, or whether it has miserably failed. As small-pox is a disease which has periods of increase and periods of decline, we have given in the following Table (XXIII.) the deaths from small-pox in Scotland during every year since the Registration Act came into operation. By that Table it will be seen that small-pox attained its maximum mortality during 1855 and 1856, after which it fell to a minimum in 1858. It again increased till it attained a maximum mortality in 1860, and then declined to a minimum in 1862. During 1863 and 1864 it again raged as a virulent epidemic, causing respectively 1,646 and 1,741 deaths in Scotland, and has every year after that declined, so that it was as near as possible extinct in 1868, seeing that only 15 deaths therefrom occurred. Although it manifested the strongest tendency to break out as an epidemic in 1870, the successful working of the Vaccination Act appears to have almost entirely limited its ravages to those unprotected by vaccination; and although we cannot yet ascertain the exact numbers who fell victims to it during that year, we may with confidence assume that

Table XXIII.—Deaths from Small-pox in Scotland, 1855–1870 inclusive.

YEARS.				Small-pox Deaths.	YEARS.				Small-pox Deaths.
1855	-	-	-	1,309	1863	-	-	-	1,646
1856	-	-	-	1,306	1864	-	-	-	1,741
1857	-	-	-	845	1865	-	-	-	383
1858	-	-	-	332	1866	-	-	-	200
1859	-	-	-	682	1867	-	-	-	100
1860	-	-	-	1,495	1868	-	-	-	15
1861	-	-	-	766	1869	-	-	-	100*
1862	-	-	-	426	1870	-	-	-	150*

* Estimated from the ascertained small-pox deaths in the eight principal towns of Scotland, as compared with the total small-pox deaths in all Scotland during the 14 years 1855–68.

that the deaths from small-pox in 1870 did not exceed 150, and will probably be found to have been little above 100. Appendix, No. 9.

How melancholy is it to reflect that in England small-pox is raging as a fearful epidemic, so that, in the single week ending 25th February 1871, no fewer than 227 deaths from small-pox occurred in London alone, and 129 in Liverpool. Yet England has a Vaccination Act, which, from some cause or other, neither the people seem to obey, nor the authorities to enforce. The people of England are, therefore, suffering a fearful penalty for not taking advantage to the full of one of the greatest modern discoveries of which the science of medicine can boast. No doubt this, to a great extent, arises from the ignorance of the people as to the protective power of vaccination, and from imaginary fears as to the risk to life which the child incurs by having vaccine virus introduced into its system. Even among many of the Scottish people much misunderstanding exists relative to the protecting power of vaccination, which it is desirable should be removed, inasmuch as a virulent epidemic of small-pox seems to be spreading northwards from France and England, and it is desirable that both the people and the authorities should understand distinctly what amount of protection from small-pox is afforded by vaccination.

The vaccine disease, or, as Jenner first called it, cow-pox, has been proved by the patient and repeated experiments of Mr. Ceely, and others, to be neither more nor less than small-pox, modified in its virulence by having passed through the constitution of the cow. In other words, when the cow takes small-pox, the disease assumes that mild form which we term cow-pox; and matter taken from the vesicles of the cow, and transferred to the human subject, is found to be so perfectly deprived of its fatal qualities, that it loses both its fatality and its power of being propagated by infection.

Now, small-pox is a disease which in general only attacks a person once during the course of his life. To this there are numerous exceptions; for we know many instances where a person has twice taken the natural small-pox, and one remarkable instance where the person had three several attacks of that disease, at the interval of a few years. As it is, therefore, the general character of small-pox only to attack a person once in the course of his life, so a person once properly vaccinated with that mild form of small-pox which we call cow-pox, is found to be as perfectly secured against an attack of natural small-pox as if he had once had the natural disease. Vaccination does not give *more perfect protection* against an attack of small-pox than what having once had the small-pox would give; but it has this immense advantage over the natural disease, that the protection is given without risk to life, without producing deformity of the countenance, without inducing loss of sight, or of hearing, and without the risk of propagating a highly infectious, loathsome, and deadly disease among the people.

Of those who take small-pox naturally, as it is called, and who have not been protected by vaccination, or by previously having had small-pox, from one in every four, to one in every seven, die from its virulence; and those who recover therefrom, however much their faces may be seamed with the ghastly scars, are no better protected against a second attack of small-pox than those who have been subjected to vaccination.

To sum up the argument in one short sentence. Cow-pox (*i. e.*, the vaccine virus), which is only modified small-pox, which has all its deleterious properties taken away in consequence of having passed through the constitution of the cow, gives as great protection against a subsequent attack of small-pox, as if the person had once taken the natural small-pox, and had recovered from the same.

Let us now look at the other aspect of the case, apparently much misunderstood by the people of England, viz., the danger to life incurred by the child undergoing vaccination, as compared with the danger to life through the person taking the natural small-pox, or being subjected to inoculation with the small-pox matter itself.

Since 1864 Scotland has had the benefit of a Vaccination Act, and the last year during which the full particulars of the deaths have been abstracted from the registers is 1868. During that year there were vaccinated in Scotland, 106,181 children, and of that number only two were recorded as having died from the consequence thereof; that is, one death in every 53,190 children. Now the constitutions of some children are such that the slightest scratch or abrasion of the skin is followed by inflammation and death. Need it be wondered at, then, that two deaths should occur among 106,181 children whose arms had been scratched to insert the vaccine virus? The astonishment is not that there were deaths, but that the deaths were so few. Had these children been all inoculated with the small-pox, and only one had died out of every 30 inoculated, 3,539 would have died; besides an equal number of the population among whom the disease would have been spread by infection, and necessary attendance on the sick. Even had the vaccinations been no more perfect in 1868 than they were between 1855 and 1864, the probability is, that at least 500 deaths from small-pox would have occurred in Scotland; yet only 15 deaths from that disease occurred, and two of these were those above noticed as being attributed to the consequences of vaccination.

In former reports attention was directed to some amendments in the working of the Vaccination Act, which would make it press less heavily on the inhabitants of the insular and more inaccessible Highland parishes, and on the desirability of shortening the period within which vaccination must be performed within all populous districts. To former reports we must refer for what we stated on these subjects. Meanwhile, is appended a selection of the remarks of the registrars as to the working of the Act, from which it will be seen how faithfully the people endeavour to comply with the requirements of the Act, and how well it is generally administered.

Appendix, No. 10.

PAPER handed in by Mr. *Seaton*, M.D., 12 May 1871.

Appendix, No. 10. SUGGESTIONS for amending the LAW (1867) relating to PUBLIC VACCINATION, by *J. H. Stallard*, M.B., Lond., M. R. C. P. L., &c., one of the Sanitary Commissioners of the "Lancet," and Author of Reports on the State of Vaccination in the Metropolis.

CLAUSE 1.—To remain.

Clause 2.—The authority for fixing the districts and appointing the public vaccinators to be in all cases that which has the control of sanitary matters, subject to the approval of the Privy Council or Local Government Board.

Clause 3.—Central Board in disapproving to state objections.

Clause 4.—To remain.

Clause 5.—To remain.

Clause 6.—Rate to be raised to a minimum of 2 s. 6 d. per case for every successful case of vaccination and re-vaccination. The primary vaccination to include the preservation of one *tube of clean* lymph to be taken on the 8th day from a child of not more than four months old, and specially certified to be free from symptoms of syphilis, skin-disease, or any constitutional complaint. The areola not being more than half an inch in breadth. The rate of payment to be raised to the same extent in all the other cases. Any vaccinator who is convicted of contravening this clause, to be liable to a charge of misdemeanour, and fined or imprisoned.

Clause 7.—Local Government to do this.

Clause 8.—Fee for re-vaccination to be the same as for vaccination, and only claimable under conditions to be approved of by central government authority.

Clause 9.—Central authority to issue form of contract, and to have power to determine all contracts and to alter forms.

Clause 10.—To remain. But a provision inserted, whereby half the fees and half the salaries of all officers, and half all other expenses incurred under the authority of this Act, shall be repaid from the Consolidated Fund by an annual vote of Parliament. The President of the Poor Law Board having power to refuse the whole or any part of this payment if the arrangements are not satisfactory.

Note.—No central authority has any effective control otherwise than as the result of helping to pay. This is the present weakness of the Poor Law Board, and the strength of the Education Department of Privy Council.

Clause 11.—To be repealed.

Clause 12.—To be omitted, as all arrangements must be subject to the approval of the central authority.

Clause 13.—Local authority to obtain the consent of central authority before altering districts; no alteration as to notices.

Clause 14.—To remain. But the form of national certificate to be adopted in the Act, and given gratuitously to every child at birth, and to be renewed by the registrar of the birth, on payment of a reasonable fee. (Form A.)

* It courts opposition to the law; but I would have less objection to a short notice.—*J.H.S.*

Clause 15.—I would withdraw this clause as * UNUSUAL and unnecessary. The present form is *not read*. It is too long and too complicated. It is not desirable to inform the *parents* by which means they may postpone vaccination, or on what grounds it is right to postpone it. The onus of registration must be left with the parent, and the penalty should be enforced by the vaccination inspector. The national certificate, duly signed, should be the only legal answer to the charge of neglecting to register the vaccination.

Clause 16.—The parent of every child shall, within three months after the birth of such child, or where, by reason of the death, illness, absence, or any other cause, any other person shall have the custody of such child, such person shall, within three months after receiving the custody of such child—

Take

Take it, or cause it to be taken, to a public vaccinator to be vaccinated, or shall, within such period aforesaid, cause it to be vaccinated by some registered medical practitioner: Provided always that no parent, guardian, or custodian shall be compelled to carry any such child more than one mile to any public vaccination station; but in that case every parent, guardian, or custodian shall be bound to require the attendance of the public vaccinator, by written notice sent by post to him at the public vaccination station. Appendix, No. 10
New matter.

Clause 16 A.—Every adult person who has not already suffered from small-pox shall, between the ages of 12 and 25 years, be vaccinated a second time either by some qualified medical practitioner, or the public vaccinator; and in the absence of any certificate of re-vaccination, the public vaccinator is hereby required to perform the operation free of charge, but subject to the conditions hereinafter mentioned.

Every public vaccinator shall attend at the station to which he is attached, at such times as shall be determined by the local authority, with the approval of the Poor Law Board. He shall vaccinate and re-vaccinate all children or adults who may present themselves for vaccination or re-vaccination, subject to the regulations which are hereinafter mentioned, or to others not contravening those of this Act, which may hereafter be issued by the Privy Council, or the Poor Law Board. He shall also attend to any of the following requisitions to visit and vaccinate, or re-vaccinate any child or adult which may be addressed to him in writing at the vaccination station, viz.:—

1. From the parent, guardian, or custodian of any unvaccinated child who shall reside at a greater distance than one mile from the public vaccination station.
2. From any adult requiring re-vaccination who may re-ide at a greater distance than two miles from any public station.
3. Whenever there is a case of small-pox in the house, court, or street in which such child or adult person may reside.
4. He shall visit and vaccinate or re-vaccinate, subject to the conditions hereinafter mentioned, any child or adult residing within his district on the requisition of three ratepayers, or of the medical officer of health.

Provision requires to be made constituting all district medical officers public vaccinators, in epidemic times, in order that they may at once vaccinate the members of infected households when they are visiting the sick poor.

Clause 17.—The same, with the additional proviso that the public vaccinator shall be required to re-visit every person not vaccinated at the public station on the eighth day after the operation at the same place where the operation was performed.

Clauses 18, 19, and 20.—Would be better omitted altogether, but if retained, they should be countersigned by a medical officer of health, or by a member of the Royal College of Physicians, or a Fellow of the Royal College of Surgeons.

If the clauses are omitted, the whole authority should be given to the magistrate, and he should be empowered to take an independent professional opinion if he thinks proper to do so.

Clause 21.—To be omitted. The whole responsibility of registration being put upon the parent.

Clause 22.—No fee shall be charged for signing the national certificate provided in this Act, neither by the public vaccinator nor the registrar; and if the vaccinator receive payment for the vaccination of any person under a public contract, he shall not be entitled to recover payment from any other person.

Clause 23.—Parent to register vaccination in the same way as the birth is registered; the national certificate to be the sole evidence of vaccination having been properly performed.

Clauses 24, 25, and 26.—To remain.

Clause 27.—Returns to be sent in monthly.

Clause 28.—Add to this: The guardians or local authority, whose duty it is to carry out this Act, shall enter into a contract with an officer to assist the public vaccinator in the execution of his duties, to examine the registers, give notice to defaulters, and perform such other duties as may be necessary to enforce the penalties provided by the law, and having for their object the full protection of the public from small-pox. Forms for such contracts shall be issued by the Poor Law Board, and no contract shall be valid which has not their approval. The Poor Law Board shall have power to determine such contracts, and to alter their terms from time to time.

In the event of the guardians refusing to make such an appointment, the Poor Law Board shall have power to do so, and to charge the salary upon the local rates.

Appendix, No. 10.

PENALTIES.

Clause 29.—

1. Every parent, guardian, or custodian of a new born child shall be bound to register the birth within seven days. Conditions of *Registration* to be considered as to—

Distance.

Witnesses or evidence,

under a penalty of

2. Every parent, guardian, or custodian who shall remove an unvaccinated child without acquainting the registrar of the district with the address to which the child will be removed, shall be guilty, &c.

Penalty of

3. Penalty for neglect of vaccination, without reasonable excuse (to be determined by magistrate, without any special forms but one, the evidence). Penalty not to be inflicted until the public vaccinator has visited the defendant, offered vaccination, and in no case more than twice.

4. Penalty for neglect to register the operation of vaccination, to be same in amount as for neglect of vaccination.

5. Penalty for neglect of re-vaccination after the age of 25, without reasonable excuse (nominal).

6. Penalty for tampering with national certificate.

Clause 31.—Order of magistrates to extend to re-vaccination of any person living in an infected street, court, or house, with a small penalty in case of refusal, without reasonable excuse.

Remaining clauses to be unaltered.

FRESH PROVISIONS.

The term successful vaccination shall be held to be the production of at least four vesicles which shall pursue a regular course; or in the case of any lesser number or deviation from the regular course, it shall include immediate re-vaccination and re-inspection. The term shall also include the preservation of one tube of clear lymph, to be taken according to fixed regulations, and preserved and distributed under the direction of the central authority, and local medical officers of health.

The vaccinators (public) and the vaccination stations to be subject to the inspection of medical officers of health, who shall be called upon to certify as to character of the operation, the degree of success obtained, the observance of the regulations, the propriety of the charges, and the general state of vaccination in the district, and as to the sufficiency of the general arrangements.

Every medical practitioner shall be entitled to become a public vaccinator, provided he can prove to the satisfaction of the medical officer of health, or to that of an inspector of vaccination employed by the Privy Council, that he has successfully vaccinated 200 children in the year from arm to arm, and is willing to attend at a fixed station and submit to the ordinary regulations for the public vaccinators; and he shall be entitled to remain a public vaccinator, and shall be paid for his work in the same scale and from the same sources, so long as he continues to vaccinate 200 children per annum from arm to arm; and it shall be in the power of the vaccination inspectors of Privy Council to close any station in which arm to arm vaccination is not sustained, either for the whole or any part of the year, subject to appeal to the Poor Law Board.

All public vaccinators to be appointed FOR SEVEN YEARS ONLY.

Supply of lymph to the public through the medical profession.

The public vaccinator shall keep a register of all tubes of lymph taken under the direction of this Act. He shall retain one-third of the tubes so taken for the use of his station. He shall transmit to the medical officer of health of the district or town in which the vaccination station is placed, one-third for the use of private medical practitioners, one tube to be given each in the order of their application, and the remainder shall be dealt with under the discretion of the vaccination inspector of the Privy Council, or the Poor Law Board. The Poor Law Board to have power to issue regulations for the preservation and distribution, so long as they are not inconsistent with this Act. The public vaccinator to be the distributor of lymph where there is no medical officer of health.

The register of vaccinations to be kept by the public vaccinator to contain the following information:—The name, age, and condition of health, and the residence of the person or child vaccinated; the date and place of operation, and the date and place of inspection; the number of punctures made, and the number of vesicles resulting, whether on right or left arm; whether the vesicles pursued a regular course, or whether advanced, retarded, or inflamed. Notes and observations, by lymph taken from the arm of , by points, tubes, or glasses. On the 8th day a special examination and inquiries having first been instituted as to the health of the child , children were vaccinated, and number of tubes of lymph were taken. A copy of this entry to be obtained by payment of a small fee.

Public

Public vaccinator to keep a register of tubes of lymph taken under this Act.
He shall retain one-third for the use of the station for home vaccination.
He shall transmit one-third to the medical officer of health, if there be one, for the use of the medical profession (one tube to be given to every applicant in the order of their application, and the remainder shall be dealt with as directed by the central authority). The central authority to be authorised to issue regulations for the preservation and distribution of lymph, so long as they are not inconsistent with the provisions of this Act. The public vaccinator to be the local distributor of lymph when there is no medical officer of health. I should propose to leave the adoption of this definition of successful vaccination to be permissive on existing public vaccinators, all of whom should be required to produce a fresh certificate as to their mode of operating being in conformity with these regulations; and upon their undertaking to carry out vaccination in the manner here proposed, I would add one shilling to the minimum and to every other fee now allowed as proposed in Clause 6.

Public Stamp
of
Town or County.

The National Certificate of (John Smith) the child of (William and Mary Smith), who was born at No. (16), (Whitefriars), court or alley, (King) street, in the Parish of (St. John), in the District of Clerkenwell, in the Town of Bedford, on the (4th) day of (June) 1870, in the presence or within the knowledge of the undersigned.

Medical Attendant.
Midwife.
Nurse.
Relation.

Directions for filling
in to be printed in
small type.

Witness.

PUBLIC REGISTRATION.

	Date.	Book.	Number of Entry.	District.	Signature of Registrars, Vaccinators, and Clergyman.
Birth Registered - - - -					
Vaccination Performed - - -					
Vaccination Registered - - -					
Re-vaccination Performed - - -					
Re-vaccination Registered - - -					
Marriage - - - - -					
Marriage Registered - - - -					

It is important that this document be carefully preserved.

NOTICE OF PENALTIES.

1. For the non-registration of a birth.
2. For neglecting to have a child vaccinated and registering vaccination.
3. For neglecting re-vaccination beyond the age of 25, and neglecting to register it.

MEMORANDUM ON PUBLIC VACCINATION in the STRAND DISTRICT.

THE numbers taken from the report of the medical officer of health for the Strand District Board of Works, which are referred to in Q. 5521-3, and which give the public vaccinations at all ages in that district before and since the Vaccination Act, 1867, from Lady-day, 1858, to Lady-day, 1870, appear to require certain explanations in order that correct inferences may be drawn from them.

1. The annual average of the 10 years 1858-67 (962 public vaccinations on 1,287 births) is not only unduly swollen by there being included a large number of re-vaccinations, as the medical officer of health in his report justly points out, but also by there being included, during several of those years, a considerable number of vaccinations of *children not resident in the district at all*. The late Mr. Jones, of Soho-square, who was public vaccinator for the parish of St. Ann's, up to 1861 inclusive, was a very popular vaccinator, who prided himself on having a good station. At this station he vaccinated all comers, a considerable portion of them being from St. Pancras and other parishes outside the Strand District; and it is not only within my own recollection that he included in his public return the whole work of the station (though of course charging the guardians with such of the cases only as belonged to the district), but a comparison of the public returns during the time he was vaccinator, with the births in the parish, shows quite clearly to my mind that this must have been the case.

2. When allowance is made for these facts, it is doubtful whether the annual average primary public vaccinations of the district for these 10 years would at all exceed the numbers given for the year ending Lady-day, 1868 (685 public vaccinations on 1,202 births, or 57 per cent.)

3. In the reconstruction of London unions which took place in 1868, the district of the Strand Board of Works, which had heretofore corresponded with that of the Strand Union, was split in two; part of its inhabitants were assigned to the new Strand Union, and part to the new Westminster Union, each of which unions has, of course, its arrangements for public vaccination. But the public vaccinators for the old Strand District who were thus displaced, did not, all of them, cease at once to vaccinate (gratuitously), though they were no longer publicly employed; by one of them, indeed, gratuitous vaccination to the extent of about 120 children a year, belonging to the district, is even still carried on. And if the vaccinations thus done for the year ending Lady-day 1869 (which I cannot reckon as less than 200) be added to the 445 public vaccinations given by the medical officer of health, the proportion to the births of that year (1,123) would not, I apprehend, be materially different from that of previous years. In the part of the district belonging to the Strand Union, so long as Mr. Kilner was clerk, there was certainly no considerable neglect of vaccination.

4. I would not, however, have it inferred that during the years above referred to, and all of them, there were not children who escaped vaccination, and especially latterly in the Westminster part of the district; but it is only the return for the year ending Lady-day 1870, which, as compared with previous years, shows an undoubted and formidable deficiency. This was due, I believe, to the agitation which, in the summer of 1869 was got up in London against vaccination, and which, in the unions to which this district belongs, was not checked by any effort at that time on the part of the guardians to discharge the duties which the law required of them; for, after Mr. Kilner's decease, no action was taken by the Strand guardians whatever, and no action had at any time been taken by the Westminster guardians, notwithstanding the remonstrances which were made to them. The medical officer of health for the district has done a public service in calling attention to this neglect on the part of the local authorities.

Edward Seaton.

Appendix, No. 11.

PAPERS furnished by Mr. *William Brewer*, M.D., M.P.

Appendix, No. 11.

HAMPSTEAD HOSPITAL.

STATE, with regard to VACCINATION, of PATIENTS admitted into HAMPSTEAD HOSPITAL between the 1st December 1870 and 13th May 1871.

	ADMITTED.			DIED.		
	Vaccinated.	Unvaccinated.	TOTAL.	Vaccinated.	Unvaccinated.	TOTAL.
Males over 10 years of Age - -	1,132	136	1,268	120	60	180
Females over 10 years of Age - -	982	143	1,125	74	50	124
Children under 10 years of Age -	233	339	572	20	173	193
	2,347	618	2,965	214	283	497

35 patients (convalescent) received from Stockwell, not noted.

4 died of other diseases, all vaccinated.

3 cases of the disease after previous small-pox, all recovered.

Hampstead Hospital,
15 May 1871.

Robert Greene, M.D.,
Medical Superintendent.

HOMERTON HOSPITAL.

FORTNIGHT ENDING	A D M I S S I O N S.						D I S C H A R G E S.						D E A T H S.											
	Men.		Women.		Children.		Total.		Men.		Women.		Children.		Total.		Men.		Women.		Children.		Total.	
FORTNIGHT ENDING	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
	36	18	32	13	16	37	84	68	2	3	1	1	5	3	1	6	1	2	1	7	1	15	15	
	52	22	34	17	12	24	98	63	16	10	16	6	38	3	3	11	1	2	2	3	1	15	15	
	24	6	22	4	10	15	56	25	33	33	26	6	74	18	1	5	1	1	4	9	4	15	15	
28 March	51	20	27	11	13	30	89	61	33	8	26	15	73	34	2	4	2	1	9	9	2	14	14	
12 April	37	12	33	7	12	25	82	41	26	8	15	9	47	31	2	3	2	3	7	7	4	13	13	
26 April	202	78	148	52	63	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	72	72	

HOMERTON SMALL-POX HOSPITAL.

FORTNIGHT ENDING	ADMISSIONS.						DISCHARGES.						DEATHS.											
	Men.		Women.		Children under 12 years.		Total.		Men.		Women.		Children under 12 years.		Total.		Men.		Women.		Children.		Total.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
10 February 1871 -	33	21	18	17	12	22	63	60	-	1	-	-	1	-	25	8	1	6	1	-	5	1	11	11
24 February "	26	8	13	9	9	16	48	33	17	3	6	4	-	2	52	13	4	4	-	5	6	2	15	15
10 March "	24	8	18	4	13	12	55	24	25	3	20	6	7	4	50	25	7	4	1	1	3	3	8	8
21 March "	27	9	15	8	6	17	48	34	33	8	12	10	5	7	41	20	5	4	1	3	7	6	11	11
7 April "	20	10	15	3	8	19	43	32	14	6	20	6	7	8	41	20	4	8	2	3	6	17	17	
21 April "	20	12	16	21	6	9	42	42	21	6	15	4	8	10	44	20	-	2	-	4	5	1	11	11
5 May "	18	8	16	10	10	13	44	31	10	3	14	9	4	14	28	26	-	6	1	3	2	1	11	11
TOTAL - - -	168	76	111	72	64	108	343	256	120	30	87	39	33	44	*240	113	10	31	5	19	1	34	*16	84

* N.B.—One man (not vaccinated) died from Phthisis. One woman (vaccinated) from Typhus. One woman (not vaccinated) from Erysipelas.

Wm. Gayton, Medical Superintendent.

FORTNIGHT ENDING	ADMISSIONS.						DISCHARGES.						DEATHS.					
	Men.		Women.		Children.		Total.		Men.		Women.		Children.		Total.		Men.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
17 March 1871	40	13	42	12	5	12	87	37	-	-	-	16	-	-	-	4	1	5
31 March "	66	13	50	4	6	18	122	35	25	-	1	1	2	1	43	11	5	6
14 April "	71	21	46	6	9	12	126	39	53	5	36	6	9	5	98	7	9	11
28 April "	74	19	56	17	8	20	138	56	19	2	25	1	4	5	48	5	10	13
12 May "	80	15	49	10	10	29	139	54	61	9	30	1	3	4	94	8	6	17
TOTAL	331	81	243	49	38	91	612	221	158	16	107	9	18	15	283	35	37	78

* Deduct from this, Total numbers of persons who have died of any well-ascertained constitutional disease, distinguishing the vaccinated from the unvaccinated - - -

J. B. Burbour, M.D., Medical Superintendent.

STOCKWELL SMALL-POX HOSPITAL.

For the 18 days, ending For the fortnight ending	ADMISSIONS.						DISCHARGES.						DEATHS.					
	Men.		Women.		Children.		Total.		Men.		Women.		Children.		Total.		Men.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
17 Feb. 1871	47	21	40	17	18	28	105	66	4	-	2	-	-	-	6	-	1	6
3 Mar. "	13	10	8	7	5	2	26	19	12	3	11	5	3	2	26	10	6	6
17 Mar. "	-	10	28	9	7	7	56	27	21	4	18	4	9	4	48	13	2	8
31 Mar. "	26	6	21	6	9	10	56	22	19	9	21	6	7	9	47	24	1	4
14 April "	18	9	16	17	16	12	50	38	17	5	19	8	8	6	44	19	2	12
28 April "	46	22	30	12	18	15	94	49	34	7	19	6	17	5	70	18	3	22
TOTAL	171	78	143	68	73	74	337	220	107	28	90	30	44	26	241	84	14	73

C. M. Carr, Medical Superintendent.

Appendix, No. 12.

Appendix, No. 12.

STATEMENT of CHIEF AMENDMENTS proposed by Mr. SIMON.

I.—LOCAL MACHINERY.

1. APPOINTMENT of Vaccination Officer to be made obligatory on guardians. All certificates now sent to registrars to be sent to him; and he, without waiting for special instructions in particular cases, to see continuously to the enforcement of the law; receiving for this purpose monthly from the registrars a list of the births which have taken place in the district, and of the infants that have died.

2. Facilities to be given for performance of vaccination by medical officers, not being contractors, in cases where small-pox is present.

II.—CENTRAL AUTHORITY.

1. To be consolidated.

2. To have, in regard of all contracts for vaccination, the power which Section IX. of the Vaccination Act, 1867, gives to the Poor Law Board in regard of contracts under that Act.

3. To have, in regard of the duties of vaccination officers, the power of regulation which the Lords of the Council now have in regard of the duties of public vaccinators.

4. To have, in regard of vaccination, the same power as Section 49 of the Sanitary Act, 1866, gives to Secretary of State in regard of other local sanitary duties.

III.—LEGAL PROCEEDINGS.

1. Section 31 of the Act of 1867 to be amended with regard to loopholes which have been found in it; and various small defects in other parts of the Act (concerning the forms of notice and certificates, and the inspection of vaccinated and re-vaccinated persons) to be amended.

2. Limitation to be put on number of magistrates' orders for vaccination to be issued in any one case under Section 31; but with provision that, if the child contracts small-pox, the parent, who has disobeyed an order for the child's vaccination, shall be subject to special penalty.

IV.—VACCINATION AUTHORITY IN METROPOLIS.

Considering that vaccination expenses in London are now defrayed out of the Common Fund, query, whether the duty of providing vaccination arrangements for the metropolis might not best devolve on the Asylums Board, instead of remaining with separate Boards of Guardians.

V.—REGISTRATION OF BIRTHS.

Query, whether in England the registration of births ought not to be, as it is in Scotland and Ireland, compulsory.

Appendix, No. 13.

PAPER handed in by Mr. *Seaton*, M.D.

Appendix, No. 13.

METROPOLITAN DISTRICT.

OFFICERS appointed by Boards of Guardians to enforce, in Unions and Parishes in the Metropolis, the provisions of the Vaccination Act, 1867.

Unions and Parishes.	Number of Vaccination Officers.	Unions and Parishes.	Number of Vaccination Officers.
Bethnal Green - - -	1 *	London, City of - - -	1
Camberwell - - -	1	Marylebone - - -	1 *
Chelsea - - -	1	Mile End Old Town - - -	1
Fulham - - -	1	Olave's, St. - - -	1 *
George's, St. - - -	1 *	Paddington - - -	1
George, St., in-the-East -	1	Pancras, St. - - -	1 *
Giles, St., in the Fields, and St. George, Bloomsbury.	1	Poplar - - -	1 *
Greenwich - - -	1	Saviour's, St. - - -	1
Hackney - - -	1	Shoreditch - - -	1
Hampstead - - -	1	Stepney - - -	1 *
Holborn - - -	2	Strand - - -	2
Islington - - -	1 *	Wandsworth and Clapham -	1
Kensington - - -	1	Westminster - - -	1
Lambeth - - -	1	Whitechapel - - -	1 *
Lewisham - - -	1	Woolwich - - -	1

* In these cases there are assistants to the vaccination officers.

Appendix, No. 14.

ANSWERS TO QUERIES.

ANSWERS of Mr. ALFRED H. McCLINTOCK, M.D.

1. How many years in the habit of vaccinating?—Twenty-five years.
2. Probable number of private cases vaccinated each year, or in total?—Upon an average about 20 cases each year; total 500.
3. Have any, and what, bad consequences followed attributable to vaccination?—Never saw any ill consequence, except what was due to rubbing or abrasion of the vesicle.
4. Have any, or many, cases of small-pox occurred among those you vaccinated?—No single instance of small-pox in a person vaccinated by me, has ever come to my knowledge.
5. Would you have probably heard of cases of small-pox so occurring?—Yes.
6. If such have occurred to your knowledge, have any of the cases terminated fatally?—*Vide* query 4.

Alfred H. McClintock, M.D., F.R.C.S.I.,
 Ex-Master of the Dublin Lying-in-Hospital.
 Director, and formerly Assistant, of the Cow-pock Institution,
 Dublin.
 Hon. President of Dublin Obstetric Society.
 Ex-President of Pathological Society.
 Hon. Fellow of London Obstetric Society.
 Hon. Member of Royal Medico-Chirurgical Society of Edinburgh.
 Hon. Member of the Obstetrical Societies of Boston and
 Louisville, United States.

21, Merrion-square, N., Dublin,
 18 March 1871.

ANSWERS of Mr. F. CHURCHILL, M.D.

1. How many years in the habit of vaccinating?—I have been 39 years in practice; I have regularly vaccinated all the children I have assisted into the world.
2. Probable number vaccinated each year, or in total?—I kept no record until 1839; from that year inclusive to the end of 1870, I have a record of 1,620 successful vaccinations entered at the time.
3. Have any, and what, bad consequences followed attributable to vaccination?—I have never seen any bad results attributable to vaccination; I have seen sore arms owing to the vesicle having been rubbed.
4. Have any, or many, cases of small-pox occurred among those you vaccinated?—Not one single case.
5. Would you have probably heard of cases of small-pox so occurring?—Unless the parents and children had left Dublin, I feel no doubt that I should have seen or heard of such cases had occurred.
6. If such have occurred to your knowledge, have any of the cases terminated fatally?

F. Churchill, M.D.,
 Fellow of the College of Physicians.

Dr. Churchill's Qualifications.

"Churchill, Fleetwood, M.D., Edinburgh 1831; M.D., Dublin, 1851; F. R. C. P., Ireland, 1851; L. M., 1852; M. R. I. A.; Hon. President Obstetrical Society, Dublin, &c. &c.; Ex-Professor Midwifery, &c. &c., Ex-President, K. Q. C. P., Ireland; Author of Theory and Practice of Midwifery, &c., and Diseases of Women, &c."—*Vide* Churchill's "Medical Directory," 1871.

ANSWERS of Mr. HENRY L. DWYER, A.M., M.D.

Appendix, No. 14.

1. How many years in the habit of vaccinating?—Upwards of 30 years.
2. Probable number private cases vaccinated each year, or in total?—About 1,800.
3. Have any, and what, bad consequences followed attributable to vaccination?—Not any.
4. Have any, or many, cases of small-pox occurred among those you vaccinated?—Not any.
5. Would you have probably heard of cases of small-pox so occurring?—Most certainly I would.
6. If such have occurred to your knowledge, have any of the cases terminated fatally?—None such have occurred.

Henry L. Dwyer, A.M., M.D.;
Fellow of College of Physicians;
Secretary of Dublin Vaccine Institution.

Dr. *Dwyer's* Qualifications, &c.

“Dwyer, Henry Law, 45, Upper Sackville-street, Dublin; M. A. and M. D., Dublin, 1861; F.R.Q.C.P., Ireland, 1845; Secretary Dublin Vaccine Institution; Physician Accoucheur, Sir F. Dunn’s Hospital; *** Examiner in Anatomy, Dublin Lying-in Hospital; formerly Vice President K.Q.C. Ph., and Obstetrical Society.”—Churchill’s “Medical Directory,” 1871.

ANSWERS of Mr. THOMAS EDWARD BEATTY, M.D.

1. How many years in the habit of vaccinating?—I have vaccinated private patients for 40 years.
2. Probable number vaccinated each year, or in total?—About 60 in each year; total, 2,400.
3. Have any, and if so what, bad consequences followed attributable to vaccination?—None.
4. Have any, or many, cases of small-pox occurred among those you vaccinated?—I never heard of any.
5. Would you have probably heard of cases of small-pox so occurring?—I think I would.
6. If such have occurred to your knowledge, have any of the cases terminated fatally?—I never heard of any.

Thomas Edward Beatty, M.D., M.R.I.A.,
Ex-President King and Queen’s College of Physicians,
in Ireland.
Ex-Professor of Midwifery, Royal College of Surgeons,
in Ireland.

Dr. *Beatty's* Qualifications, &c.

“A. B., Q. C. D., 1818. M. D. Honoris Causa, 1864. F. R. C. P. I. M. R. I. A. Late Professor of Midwifery, R. C. S. I. Late President R. C. S. I., and K. and Q. Coll. Ph., Ireland, &c. &c.”—Churchill’s “Medical Directory,” 1871.

ANSWERS of Mr. EVORY KENNEDY, M.D.

- How many years in the habit of vaccinating?—Nearly for 40 years.
- Probable number private cases vaccinated each year, or about 150, in private practice; in total, perhaps 4,500.
- Have any, and what, bad consequences followed?—None of the slightest importance attributable to vaccination.
- Have any, or many, cases of small-pox occurred among those you have vaccinated?—Very few, as far as I know.
- Would you probably have heard of cases of small-pox so occurring?—Most likely, but some may have occurred without my knowledge.
- If such have occurred to your knowledge, have any of the cases terminated fatally?—None.

Evory Kennedy, M.D.E., and T.C.D.,

Hon. Fellow and past President of the College of Physicians in Ireland; President and Founder of the Obstetrical Society in Ireland; Master of the Dublin Lying-In Hospital; and, for upwards of 30 years, Director of the Cow-Pock Institution of Ireland, where I have had an opportunity of being acquainted with the recorded results of upwards of 60,000 cases whilst connected with it.

Appendix, No. 15.

Appendix, No. 15.

PAPER referred to in Mr. *Seaton*' Evidence of 12 May 1871,
Question 5497.

Privy Council Office,
Medical Department, May 20, 1871.

RETURNS relative to the APPOINTMENT of VACCINATION OFFICERS by the
GUARDIANS of 260 UNIONS which were inspected by the Department in 1870.

I. —NOMINAL RETURN of the Unions which were reported by the Inspectors as not
having appointed Vaccination Officers.

(121.)

Alton.	Chipping Sodbury.	Lincoln.	Saffron Walden.
Ampthill.	Clifton.	Liskeard.	Salford.
Ashby-de-la-Zouch.	Clutton.	Longtown.	Samford.
Austel, St.	Columb, St.	Luton.	Smallburgh.
Axminster.	Congleton.	Lymington.	S. Molton.
Aylsham.	Daventry.	Macclesfield.	Spilsby.
Barnet.	Dulverton.	Maldon.	Stockbridge.
Barrow-on-Soar.	Edmonton.	Mansfield.	Stow.
Basford.	Ely.	Market Bosworth.	Stow-on-Wold.
Basingstoke.	Erpingham.	Mitford.	Stratton.
Bedford.	Falmouth.	Mutford.	Tetbury.
Billericay.	Fordingbridge.	New Forest.	Tewkesbury.
Billesdon.	Forehoe.	Newmarket.	Thingoe.
Bingham.	Freebridge.	Newport (Mon.)	Thornbury.
Bishop's Stortford.	Gainsboro'.	Northleach.	Torrington.
Blofield.	Glossop.	Nottingham.	Towcester.
Blything.	Hartismere.	Oakham.	Uppingham.
Bodmin.	Hatfield.	Okehampton.	Walsingham.
Bosmere.	Hayfield.	Oldham.	Wangford.
Boston.	Headington.	Penrith.	Ware.
Broughton, Great.	Helston.	Peterborough.	Wellington (Som.)
Brackley.	Hendon.	Plomesgate.	West Ward.
Braintree.	Hertford.	Pontypool.	Williton.
Brentford.	Hinckley.	Potterspury.	Wincanton.
Caistor.	Hitchin.	Radford.	Winchcombe.
Cambridge.	Holsworthy.	Redruth.	Winchester, New.
Camelford.	Horncastle.	Ringwood.	Wisbeach.
Caxton.	Hursley.	Rochford.	Woburn.
Chapel-le-Frith.	Keynsham.	Romford.	Woodbridge.
Cheltenham.	Langport.	Romsey.	Yeovil.
Chesterton.			

N.B.—In many of these Unions officers have been appointed since the Inspection, but without further inquiry a correct nominal return of such Unions could not be given.

II.—NOMINAL RETURN of the Unions which were reported by the Inspectors as having appointed Vaccination Officers.

(127.)

Abergavenny.	Cirencester.	Ives, St.	Shardlow.
Albans, St.	Cockermouth.	Kendal.	Sheffield.
Altrincham.	Colchester.	Kettering.	Shepton Mallet.
Ashbourne.	Cosford.	King's Lynn.	Sleaford.
Ashton-under-Lyne.	Coventry.	Leeds.	Spalding.
Axbridge.	Depwade.	Leicester.	Staines.
Bakewell.	Derby.	Leighton Buzzard.	Stamford.
Barnstaple.	Docking.	Lexden.	Stepney.
Bath.	Downham.	Linton.	Stockport.
Bedminster.	Dunmow.	Loddon.	Stroud.
Bedwellty.	Dursley.	Loughborough.	Sudbury.
Belper.	East Retford.	Louth.	Swaffham.
Berkhamstead.	East Ward.	Lutterworth.	Taunton.
Bideford.	Faith, St.	Market Harboro'.	Tendring.
Biggleswade.	Flegg.	Melton Mowbray.	Thetford.
Birkenhead.	Frome.	Mildenhall.	Thrapston.
Birmingham.	George, St. (Hanover Square.)	Monmouth.	Uxbridge.
Blaby.	Glanford.	Nantwich.	Watford.
Bootle.	Gloucester.	Neots, St.	Wayland.
Bourn.	Grantham.	Newark.	Wellingborough.
Brampton.	Guilford.	Newcastle-on-Tyne.	Wells.
Bridgwater.	Halstead.	Newent.	Welwyn.
Brixworth.	Hardingstone.	Northampton.	Westbury-on-Severn.
Buntingford.	Hartley Wintney.	Northwich.	Wheatenhurst.
Carlisle.	Hemel Hempstead.	N. Witchford.	Whitchurch.
Chard.	Henstead.	Norwich.	Whittlesea.
Chelmsford.	Holbeach.	Oundle.	Wigton.
Chepstow.	Holborn.	Oxford.	Wirral.
Chester.	Hoxne.	Paddington.	Witham.
Chesterfield.	Huntingdon.	Poplar.	Witney.
Chipping Norton.	Ipswich.	Prestwich.	Woodstock.
Chorlton.		Risbridge.	Yarmouth.

III.—NOMINAL RETURN of the Unions Inspected, concerning which no mention is made in the Inspector's Report, whether Vaccination Officers had or had not been appointed.

(12.)

Alresford.	Christchurch.	Royston.	Truro.
Andover.	Germans, St.	Southwell.	Whitehaven.
Bury.	Penzance.	Strand.	Workshop.

John Simon.

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COMPULSORY LEGISLATION :

1. *Objections formerly in Parliament to Compulsory Vaccination.*
2. *Evidence opposed to the present Compulsory Law.*
3. *Evidence in Defence of the Compulsory Principle.*
4. *Conclusions of the Committee favourable to Compulsion.*

1. *Objections formerly in Parliament to Compulsory Vaccination :*

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1. *Evidence to the Effect that Vaccination tends to produce or develop various Diseases.*
2. *Denial that any Disease, save Cow-pox, results from Vaccination.*

1. *Evidence to the Effect that Vaccination tends to produce or develop various Diseases:*

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1. *Origin of the present Epidemic in London :*

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1. *Generally as to the Modes of obtaining Lymph or Vaccine, and as to the Character of that hitherto in Use.*
2. *Question of Danger by reason of the Use of Impure Lymph ; Importance of Precautions on the Subject.*
3. *Mode of Supply suggested by Dr. Stullard.*
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1. *Generally as to the Modes of obtaining Lymph or Vaccine, and to the Character of that hitherto in Use :*

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1. Evidence and Statistics in Support of the Conclusion that Vaccination has had a prejudicial effect upon the Mortality generally, and that the Aggregate Mortality is not increased when there are Small-Pox Epidemics.
2. Evidence and Statistics with a view to the Refutation of the foregoing Proposition.
3. Contradictory Statements in regard to the effect upon Infant Mortality in Towns.

II. As to the Mortality from Small-Pox:

1. Evidence and Statistics adverse to Vaccination, as affecting Small-Pox Mortality.
2. Evidence and Statistics as to the great value of Vaccination in lessening the Mortality from Small-Pox.
3. Conclusion of the Committee as to the great Saving of Life by Vaccination.

I. As to the Mortality from all Causes:

1. Evidence and Statistics in Support of the Conclusion that Vaccination has had a prejudicial effect upon the Mortality generally, and that the Aggregate Mortality is not increased when there are Small-pox Epidemics:

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SMALL-POX :

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2. *Periodical recurrence of Epidemics.*
3. *Effect of Small-pox as regards subsequent Health.*
4. *Different Types or Forms of the Disease.*
5. *Conclusions as to the Mortality from Small-pox not being affected by Vaccination.*
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2. *Exceptions taken to the foregoing Conclusion.*

1. *Evidence and Statistics confirmatory of the great value of Vaccination in Preventing and in Mitigating Attacks of Small-Pox :*

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2. *Investigations by Mr. Hutchinson, resulting in the Conclusion that Syphilis has been communicated.*
3. *Evidence to the Effect either that the Disease cannot be conveyed by Vaccination, or that if there are any Cases they are extremely rare.*
4. *Inexpediency of abolishing Compulsory Vaccination, in view of the possible Conveyance of Syphilis in a few rare Instances.*
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